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THE PREDICTION OF SOCIAL EVENTS: AN INVESTIGATION OF SOME OF THE CORRELATES

by

© WILLIAM R. AVISON

A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
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IN
SOCIOLOGY

EDMONTON, ALBERTA
FALL, 1973

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled THE PREDICTION OF SOCIAL EVENTS: AN INVESTIGATION OF SOME OF THE CORRELATES submitted by William R. Avison in partial fulfillment of the requirements for the degree of Master of Arts.

Gwynn Nettler
Supervisor

William Meloff

L. Stewin

Date September 25, 1973

ABSTRACT

This thesis attempts to assess the relative importance of various possible correlates of accurate social prediction. This has implications for distinguishing between fact, value, and belief in the formulation of policy.

A review of relevant literature leads us to suggest that the widely held assumption that schooling is directly related to predictive accuracy may be incorrect. We assert that there is eveidence which enables us to hypothesize that an optimistic attitude towards the future may be negatively correlated with accurate forecasting while a conservative political orientation will be positively related to predictive accuracy.

On this basis, a conceptual model is constructed which maps hypothesized interrelationships among schooling, chronological age, optimism, conservatism, and predictive accuracy. The hypotheses on which the model is based are then empirically tested by an analysis of nine public opinion poll surveys. Using multiple regression analysis, we confirm the hypotheses that: schooling is unrelated to predictive accuracy, political conservatism is positively correlated with predictive accuracy, optimism is negatively associated with accurate forecasting, and schooling and optimism are positively related. Only the hypothesis that age and optimism are negatively related is not confirmed by the data analysis.

In addition, a negative relationship between optimism and conservatism, and positive correlations between age and conservatism, and between schooling and conservatism are also observed. A discussion of these relationships is presented in the thesis.

We conclude with a discussion of the possible implications of these results. Specifically, we assert that "the intellectual" often assumes a role of social commentator and advocate. In this sense, he advises policy-makers or endeavors to influence public opinion. Such advice implies that the man of knowledge is a competent predictor of the future. Our research leads us to suggest that an examination of the intellectual's beliefs and values which underlie his predictions and advice may serve as a useful criterion for choosing between competing advocacies.

In essence, this issue is but one instance which is more generally discussed in terms of the relationships between facts, beliefs, values, and knowledge. We define these terms and attempt to map the ways in which they have been confused. We conclude with a warning that the influence of belief and value on fact and knowledge endangers social policy by impoverishing predictive accuracy.

PREFACE

It is a commonly held assumption in our society that accuracy in predicting world affairs varies directly with the education or knowledge of the predictor. This assumption has historically led to the rise of a privileged position for the men of social knowledge, the intellectuals. For example, Coser (1965) has described the power positions held by intellectuals as advisors to policy-makers. Similarly, Znaniecki (1940) has characterized the man of knowledge as a member of the social vanguard in the sense that he is a stimulator of change. Such positions in society enable the intellectual, knowledgeable of past and present social events, to guide or influence the development of their societies with the justification that they are more accurate predictors of future social events than are the masses.

A contradiction arises, however, inasmuch as several contemporary critics of intellectualism have pointed to the inaccuracies of these predictions. If education does not aid us in forecasting with accuracy, this warrants an investigation into the correlates of accurate social prediction. More specifically, we shall argue in subsequent chapters that education is often conceptualized quantitatively in terms of schooling. To this extent, we shall attempt to assess empirically the impact that amount of schooling may have upon predictive accuracy.

In addition, the literature relating to correlates of accurate social forecasting leads us to suspect that certain value orientations may influence predictive efficiency. Toch (1958), Michael (1967), and Gabor (1971) all assert that a conservative political orientation may be associated with better predictive records. McGregor (1938), Rees (1965), and Thompson (1971) find evidence substantial enough to suggest that an optimistic attitude toward the future may be associated with inaccurate social prediction.

What follows is a study of the interrelationships among schooling, optimism, political orientation, and predictive accuracy. We endeavor in this study to construct a conceptual model with these variables to assist our understanding of the aforementioned relationships.

The implications of this study touch on sensitive issues. If characteristics of the predictor other than his schooling are more central to accurate prediction, our conception of intellectuals as able forecasters must be reexamined. Indeed, our finding that conservative and/or pessimistic predictions are more accurate, if substantiated by other research, advises us in choosing between the man of knowledge as seer or as moralist. Further, in regards to the influence on the public and policy-makers wielded by the intellectuals, our research may aid us in selecting among competing advocacies.

The broader issue which underwrites our concern with the intellectuals as predictors of future social events revolves about the relationships among fact, value, and belief. We shall argue that the confusion of value with fact exerts a debilitating influence on knowledge and our use of it. More explicitly, if we would make better use of facts and knowledge, we must be willing to alter our beliefs according to the facts which are presented.

What follows is an enumeration of the topics which will be discussed in the following chapters.

A. Assessing Possible Correlates of Predictive Accuracy

The discussion begins with an attempt to define prediction and to distinguish it from prophecy and explanation. In so doing, an attempt is made to develop a classificatory system which differentiates among various types of predictions. From this classification, we assert that predictions of social events tend to employ one of two distinct methodologies: the actuarial method or the clinical method. In reviewing the debate over the relative advantages of these two methods, we conclude that actuarial (statistical) prediction may be more efficient.

Following this survey of predictive methods, a review of relevant literature on potential correlates of predictive accuracy is presented. We conclude from this that schooling may not be associated with the ability to make correct social forecasts. As well, there is support for the tentative conclusion that a pessimistic attitude toward the future and a conservative political orientation may well be correlated with accuracy in social prediction.

The chapter concludes with an assessment of the predictive performances of intellectuals. In general, it would appear that these men of ideas have been in error on a significant number of occasions.

B. Constructing a Conceptual Model

Having discussed the relationships between the independent variables of major concern (schooling, optimism, and political conservatism) and the dependent variable (predictive accuracy), we go on to speculate on secondary relationships among the former. As well, we add one more variable which may be of importance: chronological age.

Following this, five hypotheses are generated for empirical testing and a hypothetical model is constructed. In constructing this model, attention is paid to the question of causation. The utility of a causal approach to modeling is justified.

C. Methodology and Data Analysis

To assess the relative accuracy of our formulation, the hypotheses which were developed are empirically tested. First, a discussion of the relative merits of secondary analysis of survey research data sets is presented. A description of the public opinion poll data sets which are utilized in the secondary analysis follows. Nine such surveys are analyzed, selected from data made available by the Department of Political Science, The University of Alberta, and by the Roper Public Opinion Research Center.

Composite indices are constructed to measure optimism, conservatism, and predictive accuracy. These indices are constructed by the additive combination of dichotomous items which exhibit relatively high intercorrelations. Reliability measures are derived for each composite index.

Each of the nine studies is analyzed by applying stepwise multiple regression analysis. Justification for the use of this technique and the rationale underlying it is presented in this chapter. The hypotheses are thereby tested, some interesting relationships discussed, and the conceptual model is then revised. The hypothesis that schooling is unrelated to predictive accuracy is confirmed as are those hypotheses that forecast a negative relationship between optimism and predictive accuracy and a positive correlation between conservatism and correct prediction.

D. Implications: The Intellectuals, Facts, and Values

We conclude with a statement of the implications of our study. We assert that our research provides a useful framework for assessing some of the roles which may be assumed by intellectuals in society. After defining "the intellectual," we argue that one of his major roles involves some nature of social advocacy. He may attempt to influence public opinion or advise on social policy. This role implicitly (and often explicitly) rests on the assumption that the man of knowledge has special competence in forecasting social events.

Our research leads us to suggest that an examination of the intellectual's values and beliefs which underly his predictions and advice may serve as a useful criterion for choosing between competing advocacies. In essence, this issue is but one instance which is more generally discussed in terms of the relationships between facts, beliefs, values, and knowledge.

We define these terms and attempt to map the ways in which these terms have been confused. We conclude, then, with a warning that the influence of belief and value on fact and knowledge is one which endangers social policy by impoverishing predictive accuracy.

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CHAPTER I

INVESTIGATING POTENTIAL CORRELATES OF PREDICTIVE ACCURACY

Man in the present constantly makes conjectures about the future; the future, as a field of uncertainty, provides him with the opportunity to conceptualize heretofore nonexistent phenomena and to attempt to validate such conceptions. The past is the only realm of knowable facts yet the only useful facts we have are those which may be applied in the future. Man lives, then, in a world of the future while attempting to apply his knowledge of the past. To this extent, he must rely on his predictive skills to assist himself in coping with his environment.

"The increasing transformation of facta into futura by summary processes in the mind is part of our daily life, and thus the undertaking of conscious and systematic forecasting is simply an attempt to effect improvements in a natural activity of the mind" (de Jouvenal, 1967: 6).

Indeed, it would seem that man must continually predict in order to act.[1] The executive leaves for work one hour before his office opens because he predicts that the time taken to commute will be approximately one hour. The student arrives at his class at 9:00 a.m. because he predicts that there will, indeed, be a class to attend. If such examples appear to be mundane, we need only look at larger social events. Political parties present specific platforms designed to solve problems which they predict will arise in the future.

Our interest is not in the acts which follow prediction but in some of the correlates, perhaps even determinants, of predictive accuracy, especially of larger social events. If factors other than knowledge of the facts influence accuracy of prediction, what are they? Moreover, how do they affect accuracy? It is to these and other questions that we must address ourselves.

A. Prediction, Prophecy and Explanation

Historically, predictions have been based on a variety of indicators. The ancient Greeks sought the wisdom of the gods and the oracle at Delphi. The Egyptians and Babylonians resorted to examining entrails for signs. In our society, we note the return to astrology and the I Ching. In addition to these predictive "aids," man has always based his predictions, in part, on observable facts and information. We believe that the sum total of knowledge and facts has increased to the extent that we have more empirical information on which we may base our forecasts. We now conceive of most predictions as resting primarily on the strength of empirical knowledge rather than on intuition or superstition.

In its most general usage, "... prediction is essentially a practical procedure of making observations and deductions from observations in accordance with established rules" (O'Connor, 1957: 314). Such a definition, however, makes possible the inclusion of prophecies and explanations under the heading of predictions. While it should be apparent that prophecy and prediction are often used synonymously, an important characteristic distinguishes one from the other. Prediction may be more strictly defined as the foretelling of the future on the basis of a scientific analysis of present and past events; scientific, implying an inductive-deductive system of logic. Prophecy refers to the forecasting of future events by inspiration.

While predictions, for the most part, are based on empirical observations, prophecies are derived from the divinations of the prophet. In general, the source of empirical observations for the predictor is exogenous; that is, from the outlying phenomenological world. For the prophet, his divinatory perceptions are endogenous to himself. Essentially, then, the differences between prediction and prophecy amount to one major distinction: "... we assume that the prophet has received his knowledge by way of divine inspiration or by inner illumination of another kind -- in any case he himself can rarely offer an alternative explanation. Predictions ... are thought to be more subject to rational examination, since the empirical facts or arguments on which they are based can, in turn, be verified by anyone who cares to do so" (Lewinsohn, 1958: 38).

The distinctions between predictions and explanations are far more intricate for there are also striking similarities. Predictions and explanations are not concrete, natural features in the world; they are concepts. Moreover, they are human performances, assertions and/or statements relating to the world as it is perceived.

It would appear, however, that there are four major characteristics which differentiate predictions from explanations. Most obvious is the fact that predictions are oriented to some future time; explanations, to the past. This temporal asymmetry constitutes a major difference between the logical structures of predictive statements and explanatory statements. "It might be well, as Professor Michael Scriven has proposed ..., to distinguish explicitly between predictions of two kinds: (1) predictions which select, faute de mieux, that principal alternative that is relatively most likely, but whose non-realization is nonetheless more likely than its realization, and (2) predictions whose realization is claimed to be likely per se. However, prediction is a logically weaker procedure than explanation, and this is so in both senses, even in the second, stronger one" (Rescher, 1958: 287fn).

This leads us to discover a second, more subtle distinction. Rescher (1958: 285) defines explanation as

"... a comprehensive and conclusive accounting as to why something is the case." From this, we may see that there is a basic epistemological difference between the two concepts. An adequate explanation must provide a conclusion which is almost certain. A prediction, on the other hand, need only proffer a conclusion which is more likely than alternative possibilities. As Scheffler (1957: 298) suggests, "... far from differing only in pragmatic relationships, explanation and prediction have different logical characteristics: explanations are true, predictions need not be; making predictions is one way of confirming the existence of explanations; predictions may be made with or without rational grounds, and some rational grounds adequate for prediction fail to explain the predicted occurrence."

Another aspect which aids us in identifying a prediction as opposed to an explanation relates to content. While we speak of predicting events or consequences, we never speak of predicting terms or laws or concepts. Explanations differ inasmuch as we may explain concepts as well as events. Predictions relate only to the concrete, to operationalizations of terms, concepts or laws.

Finally, there is a significant distinction between prediction and explanation which can be elucidated by reference to evidential relationships. Evidence may be thought of as any statement which lends weight to a conclusion. No irrefutable assumptions may be made that evidence in support of a proposition necessarily achieves that end and, hence, supports the conclusion. "A true statement may legitimately provide evidence for a falsehood, and one statement may constitute evidence for each of several incompatible statements" (Rescher, 1958: 288). To this degree, evidence is a logically weaker cognate of explanation; it serves only to make the conclusions of an explanation more acceptable than other possibilities. It is just this feature, linking evidence and explanation, argues Rescher, which makes evidence a concept which fits the logic of prediction so well. Thus, "... the epistemological concept in terms of which the relationship between explanation and prediction can most effectively be explicated is the concept of _supporting_ evidence. Indeed, it is necessary in the interests of logical taxonomy to reclassify prediction as an evidential, rather than as an explanatory mode of reasoning" (Rescher, 1958: 290).

B. Some Features and Functions of Prediction

Having delineated those characteristics which differentiate prediction from prophecy and explanation, we may now examine various aspects of prediction integral to our study. Iklé's (1968) reflections have led him to suggest that there are two features which separate predictions of social phenomena from all other predictions. Primarily, social forecasts often exhibit a self-fulfilling or self-defeating effect. Iklé maintains that the audience for whom predictions are made may strive to encourage or repress the predicted outcome depending on their particular value orientations. In this way, the outcome of a forecasted event may be altered by the very fact that a prediction has been made. Karl Popper (1961: 13) also affirms this observation: "The idea that a prediction may have influence upon the predicted event is a very old one. Oedipus, in the legend, killed his father whom he had never seen before; and this was the direct result of the prophecy which had caused his father to abandon him. This is why I suggest the name 'Oedipus effect' for the influence of the prediction upon the predicted event (or, more generally, for the influence of an item of information upon the situation to which the information refers) whether the influence tends to bring about the predicted event, or whether it tends to prevent it." Secondly, Iklé believes that there exist advance signals for social predictions which do not generally exist for other subjects of prediction. Bell (1968: 328) takes the same perspective when he states that, for some social events, "... one can begin with the kinds of demands that will be made by disadvantaged groups; and this follows what might be called 'Tocqueville's Law,' which is that in a society pledged to the idea of equality, what the few have today, the many will demand tomorrow."

Social predictions appear to serve several functions.

Many predictions are made purely for entertainment or for spiritual edification. Forecasting by palmists and astrologers are examples of the former while claims of "The Second Coming" and the end of the world are frequently cited as cases of the latter. In this sense, these forecasts are better classified as prophecies; however, Iklé makes no such distinction. Iklé proposes that social predictions may also serve to overcome indecision. "Medieval philosophers have pondered the question why Buridan's ass, equidistant between two equal heaps of hay, would not die of hunger since nothing in the objective situation would tell it whether to turn left or right. More often than we realize, we find ourselves in the position of Buridan's ass: We face several courses of action, of which we can only know that they are better than inaction, but among which we cannot find the preferred choice because their consequences (considering their utility and probability) look indistinguishable" (Iklé, 1968: 102). In such instances, it may be that differences in the various courses of action are rationalized to facilitate prediction and, hence, a specific line of action. A third, common function of social predictions is to serve as a guide. Such predictions attempt to describe expected consequences of particular courses of action and their alternatives in order that we may shape the future more to our liking. In essence, this function is a manifestation of the self-fulfilling or self-defeating nature of social predictions mentioned earlier.

Also of interest is the notion of predictive accuracy or validity. "The problem of the validity of judgments about the future or unknown cases arises ... because such judgments are neither reports of experience nor logical consequences of it. Predictions, of course, pertain to what has not yet been observed. And they cannot be logically inferred from what has been observed; for what *has* happened imposes no logical restrictions on what *will* happen" (Goodman, 1965: 159). Predictions are generally based on some assumption about trends or cycles; in other words, they are often determined by the particular theory of history to which the predictor adheres. Again, however, it should be stressed that adherence to a specific historical perspective does not necessarily imply that predictions will be logical extensions of the tenets of that theory. Thus, the validity of a prediction cannot be predetermined; it can only be confirmed in retrospect. Given such restrictions, it is no surprise that many scholars have declared that the passage of time is the predictor's ally. The greater the span between the time when the prediction is made and the point when the predicted event is to occur, the greater the probability that (a) the event may have occurred purely by chance, or (b) the public will have forgotten the original prediction.

Observing that there are these theoretical arguments militating against the possibilities of great predictive accuracy, it may be that "... among the predictions that can be made most confidently and that are most confidence inspiring are certain predictions that something is unknowable" (Iklé, 1968: 107). But our trust in knowledge and our inherent optimism does not appear to allow us the humility of taking such a perspective; rather, we plunge into predicting the future, ever confident of our abilities.

C. Classifying Predictions

Several scholars[2] have attempted to classify various predictions in an attempt to point out similarities in their content and methdology. Perhaps the most exhaustive attempt has been presented by Lewinsohn (1958). His classification (refer to Table 1) includes those processes which should more accurately be labelled prophecies. From the previous discussion, it is possible to discriminate between predictive and prophetic processes included in Lewinsohn's paradigm.

Most obvious is the observation that the intuitive (1a an[illegible]1b) and imaginary (5a and 5b) methods of prediction are simply prophetic processes in the sense in which prophecy has been defined. Similarly, those deductive methods of prediction based upon pseudo-laws (2b) seem to closely resemble prophecies in their dynamics. Inasmuch as the forecasts made using this method are based upon "pseudo-

TABLE 1.

LEWINSOHN'S CLASSIFICATION OF PREDICTIVE METHODS*

Classification	Basis	Characteristics	Applicability
1. Intuitive	a. Revelation	Belief in transcendental inspiration and absolute faith in the validity of the prediction	Religious prophecy
	b. Inspiration . . .	Sudden realization of hidden connections	Many discoveries and inventions
2. Deductive	a. Verifiable laws .	Deduction of particular predictions from a general principle	Science, Sociology
	b. Pseudo-laws . . .	Predictions from illogical or antiquated principles	Astrology, Fortune-telling, Palmistry, etc.
3. Inductive	a. Individual . . . . experience	Unsystematic deductions by false analogy	Work, particularly crafts
	b. Experiment	Generalization of systematized individual investigations	Science, Technology
	c. Statistics	Conclusion from aggregates according to probability theory	Meteorology, Medicine, Public Opinion Polls, Economic Research, Insurance, Government
4. Activist	a. Individual . . . . action	Predictions of the results of voluntary behavior	Everyday life
	b. Planning	Long-range and complex objectives; creation of new conditions	Industry, Public Finance, Armaments
5. Imaginary	a. Creative fiction .	Utopias, Science Fiction	Literature, Art
	b. Unconscious . . . fiction	Visions, generally based on wish-fulfillment and past events	Dream Visions, Hallucinations

*Abstracted from Lewinsohn (1958: 49-50).

laws," the process is not completely scientific in nature; there is a significant amount of divination and/or intuition involved in astrological and other such forecasts.

The remaining classifications (2a, 3a, 3b, 3c, 4a and 4b) exhibit properties corresponding to the previously developed description of predictive processes. One interesting method, which Lewinsohn categorizes as activist based on individual action (4a), warrants closer examination. Predictions of this type substitute an experiential component for the scientific properties of most predictions. While recognizing that such replacements reduce the objectivity of the forecasts, it should be noted that they closely parallel the methodology involved in clinical predictions.[3] Other than this interesting exception, Lewinsohn's remaining categories conform to our definition of prediction.

D. Clinical Versus Actuarial Predictions

When examining in depth those types of social forecasting which are "scientific" in nature, one is able to relegate these predictions to either of two categories. On the one hand, the prediction may be classed as an actuarial (statistical) one; on the other, it may be classed as clinical.

The significant differences between these two techniques are best understood by examining the logical structure of the process of predicting scientifically. Holt (1958) has constructed an idealized, five-step paradign which accomplishes this purpose. The first step involves making acquaintance with the subject material; obtaining knowledge of the social event to be predicted. Next, the predictor must concern himself with deciding what intervening variables need be considered if an accurate prediction is to be made. The third logical step entails finding types of data which afford indications of the considered intervening variables. Following this, the data are gathered and processed so that measures of the intervening variables are made available. The fifth and final step in the predictive process involves combining the processed data to arrive at a prediction of some nature.

It should be reiterated that Holt's paradigm is an idealized form of the predictive process. Steps may be deleted by the predictor on the pretext that he already possesses the necessary information at hand. Consideration of the data and ensuing decisions regarding its utilization may not be made formally; rather, the predictor may make certain sweeping assumptions about his own familiarity with the subject of his forecast and, so, simply bypass certain steps. Nevertheless, this five-step process does provide a model which serves as a basis for examining prediction and distinguishing between clinical and actuarial methods.

"The defining distinction between clinical and actuarial methods is ... to be found in the way in which the data, once specified, are combined for use in making the prediction" (Gough, 1962: 530). In the light of this statement, it becomes apparent that clinical and statistical predictions do not differ from one another in the first two steps of Holt's model. This has been confirmed by Sarbin (1942) and Meehl (1954, 1957).

Holt suggests that clinical and actuarial methods begin to embark upon different methodological paths at the point where indicators of intervening variables are chosen in the third step. Actuarial predictors often make a practice of cross-validating their predictive data while clinicians seldom take such a precaution. Meehl (1954), for example, reviews twenty clinical prediction studies; not one of these made any attempt to cross-validate the data. "This alone, is a major reason to expect superior performance from the actuarial predictions, and ... it is a disadvantage under which the clinician by no means has to labor" (Holt, 1958: 3). Arguing that clinicians could take this methodological precaution, Holt suggests that this third step only marginally distinguishes actuarial from clinical methods. Indeed, he implies that it points more specifically, to the differences between naive and sophisticated predictions, be they clinical or actuarial.

The tasks undertaken in the fourth and fifth steps are, in Holt and Meehl's opinion, critical for determining whether the forecast is actuarial or clinical. In gathering and processing the data, the techniques employed may range from automated, cumulated recordings, which provide purely actuarial summary statements about the data, to conversion of the data by the predictor through classification according to assumed properties of the data; that is; according to the clinical judgment of the predictor.

The fifth step, that of actually predicting, may also vary in technique from a purely statistical one, where a fixed rule is applied (usually an actuarial table or regression equation), to a clinical prediction. In the latter case, certain idiosyncratic features of the predictive situation prompt the clinician to modify his forecast. The impact of these particular characteristics on the imminent prediction is dependent upon the clinician's past experience in similar situations. To this extent, his forecast is based on a greater degree of subjectivity than are predictions of an actuarial nature.

In perusing available literature in order to assess the relative success rates of clinical and statistical prediction procedures, one notes that the advantage in the rivalry appears to lie with the actuarial method. For example, Sarbin (1972: 593) found that "... the case-study [clinical] method which presumably accounts for an innumerable assortment of variables is no more accurate than a simple statistical method which accounts for only two variables." Meehl (1954: 119), in reviewing studies comparing clinical with actuarial predictive accuracy concluded that "... depending upon one's standards for admission as relevant, from 16 to 20 studies involving a comparison of clinical and actuarial methods, in all but one ... the predictions made actuarially were either approximately equal or superior to those made a a clinician." Sawyer (1966) also found apparent superiority of statistical methods of prediction over clinical ones in his survey of forty-five studies.

Meehl (1959) has advanced the argument that clinical methods of prediction may be best utilized given certain situational characteristics of the events to be predicted. Of greatest significance for this discussion is Meehl's assertion that clinical methods may be initiated by the predictor when he is required to forecast in a very short period of time. Secondly, "... from time to time the prediction situation presents special cases in which a factor or configuration is highly relevant but has not occurred even in the course of very extended actuarial experience. In such cases the human judge must spontaneously notice the special circumstances and assign to it an estimated weight" (Meehl, 1959: 102). It is suggested that situations may often arise wherein an interaction of these two factors occurs. Individuals often find themselves in positions where they are pressed to predict future events "on the spot." Such occasions may place these predictors in a quandary; they may have no specific actuarial knowledge of the event to be forecast. To overcome this inadequacy, they assign weights of importance to variables which they assume will affect the subject of prediction and then quickly make a clinical prediction.

E. Considering Correlates of Predictive Accuracy

We believe that the individual draws assertions about future events from mentally examining and reconstructing what he believes about past and present phenomena related to those future events. To this extent, predictions may be conceived of as instances of psychological inferences. McGregor (1938: 179), in his survey of the literature on inference-making, finds agreement among researchers that "... (1) generalizations of previous experience are essential, (2) some pre-existent attitude or set is always influential, (3) introspective reports do not materially clarify the nature of the phenomena, and (4) the process is exceedingly complex." This statement provides some clues as to areas of profitable investigation for possible social correlates of predictive accuracy.

It appears to be a widely held belief that education serves as an aid in making correct social predictions. Policy advisory positions in government bureaucracies are often filled by well-educated "experts." An applicant's education is of great interest to any employer. What is of greatest import for this study is the observation that, in everyday life, we conceptualize education quantitatively, not qualitatively. That is to say, we are concerned, not with the kind or content of education, but with how much schooling one has. Indeed, this has been referred to by Wood (1968: ii) in examining the public's perception of intellectuals: "The intellectual was perceived by high class respondents to be an introverted bookworm, highly educated whether formally or on his own ... To low class subjects, the intellectual was ... university educated ..."

The importance placed on schooling as a means towards achieving accuracy in predicting social events appears to spring from the widespread view of schooling as a panacea for all obstacles which confront us. Davis (1967) and Hardin (1968) have commented at length on their observations that there are situations where knowledge of the dynamics does not assist in rectifying the difficulty. They suggest that there exist many "problems" which have no solution. Nettler (1973) similarly maintains that some social issues which society considers to be problems (implying that a solution of some nature is possible) are better termed concerns or difficulties. The very notion that solutions exist implies that more knowledge will make life more pleasant. Nettler would suggest that difficulties such as poverty and over-population may not be solvable; rather, they are social concerns whose undesirable ramifications may continue to exist despite the accumulation of more knowledge about them.[4]

Returning to the central issue at hand, the relation between schooling and predictive accuracy, one notes that, among the empirical research focused on this issue, McGregor's (1938: 203) major study represents the most ambitious attempt to study correlates of accuracy in predicting social events. Regarding schooling, he finds that "... the amount of information possessed by the predictor, and his sophistication or expertness are shown to have little significance in the determination of predictions concerning complex social phenomena." Bartlett and Green (1966) have demonstrated that predictive efficiency when using clinical methods decreases as the number of variables considered increases. Knowledge and consideration of many aspects of an event to be predicted would appear to make the task much more difficult. This parallels Miller's (1958) research which concludes that there may be a limit to our cognitive capacity to process "chunks" of information.

Kaplan *et al*. (1950) have presented a significant attempt to evaluate the predictive accuracy of "experts." They selected a group of twenty-six individuals whom they had classified as experts in economic affairs and statistical inference. This group was asked to predict various social and technological changes in society. The researchers found that the predictors were correct for fifty-three percent of their social predictions and fifty-one percent of their technological forecasts. It is obvious that, had policy-makers acted upon the predictions of these "experts," the outcome may well have been costly. In addition to these strikingly low accuracy rates, Kaplan and his associates find what they consider to be strong indications that schooling and the addition of more knowledge have little effect upon predictive accuracy. Indeed, they note that the success rate of the best informed predictors was not vastly greater than that of the least informed.

An interesting observation by Lewinsohn (1958) merits consideration at this point. He believes that experts and experienced men may become over-confident concerning their own abilities. "The self-confidence of experienced men is expressed in their mistrust of, and contempt for, all systematic attempts to gain an intuitive over-all picture. They are therefore opponents of all statistics, and, at best, admit those facts and figures which agree with their own experience. Conversely, all statistics which gainsay their narrow viewpoints are dismissed as erroneous, misleading or unreliable" (Lewinsohn, 1958: 41). While this statement may be an overgeneralization, it raises an important question. Does the man of knowledge often reject evidence contradictory to his own position when he is in a position to do so? This is not intended to cast aspersions upon the intellectual integrity of experts, policy-makers and wise men. Rather, the intent is to suggest that these men of experience, confident in their own intellectual capabilities and knowledge, may honestly reject evidence which threatens their own observations, values and beliefs. If this be the case, then more information will not lead to more accurate predictions.

Returning to the empirical evidence at hand, it is suggested that one conclusion regarding schooling and predictive accuracy is inescapable. All relevant studies lead ultimately to the observation that predictive accuracy may not be improved by providing the predictor with more schooling or more information. An empirical test of this conclusion will be undertaken at a later point in this study. Meanwhile, other possible correlates of predictive accuracy must be examined.

Referring back to McGregor's definitive work, we find that it leads to some provocative speculations. The mention of the importance of a pre-existent attitude would seem to be especially applicable in the area of political beliefs and attitudes. McGregor refers to "wishful factors" which influence predictions and, hence, predictive accuracy. "An individual's pre-existent attitudes, wishes and knowledge concerning a given social situation provide a frame of reference that will influence the formation of premises upon which his predictions concerning events related to that situation will be based" (McGregor, 1938: 182).

It seems reasonable that political ideology may have significant impact upon predictive accuracy. Take, for example, the predictions of socialist intellectuals regarding the spread and development of socialism. "Around 1930 there was a wide-spread feeling among the Western intellectuals that the bourgeois civilization was doomed, and some of the best -- Gide, Malraux, Koestler, Silone, Haldane, Strachey, to mention only a few -- turned their hopes towards the U.S.S.R. They were disappointed to a man, disgusted by the Stalinist tyranny and by the slavish submission with which it was accepted" (Gabor, 1971: 12). McGregor points to the same nature of events occurring with respect to the predictions of the 1937 presidential election in the United States; a greater proportion of Democrats than of Republicans were more accurate in predicting F.D. Roosevelt's victory. Michael (1967) and Toch (1958) also take the position that predictions are influenced by political attitudes. "Let me begin by suggesting that all studies aimed at forecasting the future inherently contain a substantial political component. I do not mean political in a partisan sense, rather I mean it in the broad sense of having influence or being perceived as having influence on preferences for action. That is to say, one is concerned about the future in order to do something about it in the present. Any study attempting to speculate on future social implications thereby is also making observations on the present effects of technology. Or putting it another way, to some substantial degree, observations about future impacts will be accepted or rejected to the degree they are compatible with preferred views about the vested interest in the present and how it got that way and what it is. One tends to accept a view of the direction of the future that is compatible with views about the nature of the present and with what one's interests are in preserving or changing the present" (Michael, 1967: 890).

A third fruitful area of concern may be developed around the relationship between optimism and predictive accuracy. Heilbroner (1960) suggests that man is basically an optimist; this optimistic perspective pervades man's perception of the social milieu both in the present and for the future. "We are naturally sympathetic to ideas which stress the plasticity and promise, the openness of the future, and impatient with views which emphasize the 'fated' aspect of human affairs. We strive to see in the challenges which beset us not obstacles but opportunities. In a word, we are an optimistic people" (Heilbroner, 1960: 16). Heilbroner asserts that we "... have always been convinced that the future would be propitious because we would make it so" (1960: 49). This may be traced to the conditions in which North Americans find themselves: a geographical setting conducive to rapid development, relative material independence from other world powers, political and economic, and a lack of an onerous history. To the extent that the North American was an optimist out of conviction, Heilbroner maintains that he becomes an optimist out of conditioning.

McGregor (1938) briefly examined the impact of optimism and pessimism upon predictive accuracy. "_Optimism_ and _pessimism_ are two personality traits that are extremely influential in the predictive process. They might almost be defined as tendencies toward wishful and anti-wishful thinking, respectively. Both the confirmed optimist and the confirmed pessimist disregard the evidence of the 'facts.' The predictions of the former are in accord with his wishes; those of latter are consistently in opposition to them" (McGregor, 1938: 197).

Thompson (1971) notes that the post-Eisenhower period in the United States was one of optimistic predictions promising massive improvements in racial integration, poverty prevention, and world power position; he points to the obvious failure of such optimistic forecasts. The 1960's, as a decade of optimistic predictions, was a disaster. "'My colleagues are perceptive,' says Harold Orlans, 'but at so tragic and uncertain a time, why are they so optimistic?' Because, he supposes, all Americans are optimistic; because intellectuals, unlike those in rougher trades, are sheltered from personal experience and so underestimate" (Thompson, 1971: 90). Rees (1965) also believes that the optimist is more prone to predictive inaccuracies. As one case in point, he cites the many forecasts which Winston Churchill made. An effervescent optimist regarding British politics, his prognostications of election turnouts and support were often very inaccurate. However, "... Churchill's acceptance of war as an ultimate reality of our time came from a profound and tragic insight into the present" (Rees, 1965: 9).

Gabor (1971) rails at the "glandular optimists" who have distorted both their own and others perception of reality to the extent that accurate prediction of the future has become an impossible task. He asserts that "... the sceptics and pessimists have taken men into account as a whole, the optimists only as producer and consumer of goods" (Gabor, 1971: 17). Continuing, Gabor suggests that this optimistic Weltanschaung may be linked to the liberal tradition in North America. "There are today four million compulsive alcoholics in the United States, a rate as high as Sweden's. The rate is the highest in the rich West, which by climate and wealth is the nearest thing to an industrial paradise. In lovely San Francisco one adult male in ten is an alcoholic. In criminality the United States has the highest rate of all countries. In Britain between 1939 and 1961 crimes of violence by the 14-21 age group have increased nearly fifteen-fold. 'This', writes Anthony Crossland, 'came as a particularly poignant shock to liberals who had traditionally equated crime with poverty and bad housing; the new violence, on the contrary, seemed actually a product of prosperity'" (Gabor, 1971: 151). The convergent theme of these scholars is apparent: predictive accuracy may be adversely affected by the optimism of the predictor. As Gabor has noted, "... the Jeremiahs and Cassandras of the past could not avert the disasters which they prophecied. Optimists like Helvetius, Jeremy Bentham, or John Stuart Mill, though they were often wrong, could do some good" (Gabor, 1971: 204-205). Included in this goodness was, no doubt, the telling of good stories which pleased their readers. While the good was provided, it most probably was intended for the present; man's interest, being focused on the future, was certainly not served by these optimistic, and incorrect, prophets.

F. Are Intellectuals Accurate Prophets?

Having now described prediction and suggested two variables, optimism and political preference, which may correlate in some way with predictive accuracy and another, schooling, which appears to be uncorrelated, it now seems appropriate to survey the predictive records of intellectuals. At issue is the assertion that intellectuals are not as accurate as we would originally have believed. In order to lend support to this statement, several instances of inaccurate forecasts by intellectuals will be presented.

Sisk (1970) describes the optimistic predictions of well-known intellectuals such as Buckminster Fuller, Herbert Marcuse and N.O. Brown and somewhat acerbically notes that we still await the arrival of certain predicted occurrences. Chamberlain (1933: 278) recalls the errors in prediction made by intellectuals shortly before the onset of World War I: "... the intellectuals, the playboys of ideas, the young and hopeful baiters of the bourgeoisie, had not looked upon the death that the system under which they had been reared was capable of dealing. It looked like a good bet, in 1913, for a fairly intelligent, fairly good-natured and fairly easy transition, via the ballot, via a liberalism called to terms by radicalism, to the millenium." Obviously, the chaos of a world war was not the millenium so optimistically predicted by the intellectuals. In a similar vein, intellectuals almost unanimously predicted a massive economic depression after World War II; this also proved to be incorrect.

In relation to economic matters, it has been the belief of many "experts" that we cannot predict future economic events with a high degree of accuracy. "The fallibility of the economist has earned him some rather widespread contempt and ridicule from various sections of the laity. 'Practical' men, businessmen or government officials who almost revere the doctor and the engineer, usually have scant respect for the prowess of the economist.

They like to say, for example, that 'if all economists in the world were laid end to end, they still wouldn't reach a conclusion,' or that economists are ineffectual fuzzy-headed ivory-towerites who should be entirely ignored" (Schoeffler, 1955: 3-4).

These strong negative reactions to economic prognosticators are probably the result of repeated errors in prediction by economists, errors such as Morgenstern (1963) and Zarnowitz (1967) have documented. We note, also, that the predictions of many intellectuals such as Galbraith, Servan-Schreiber and Marcuse have been based on the work of those very economists whose conclusions have been so widely discredited by events.

The prediction of nuclear holocaust by luminaries such as Bertrand Russell and Benjamin Spock has shown itself to be wrong. This may be a case wherein the predictor's political attitudes have intervened to create incorrect forecasts.

Other intellectuals have predicted an end to bureaucracy and the rise of a new social system in which people would become more rational, moral, and intellectually committed. Bennis (1970) describes how they have admitted their errors in futurology and notes how these intellectuals have become more pessimistic about the future.

These few examples serve to justify our testing hypotheses about the prophetic advantage of schooling and the wisdom of intellectuals. In following chapters, we shall attempt to develop and test a model which accounts for the impact of optimism, political attitude and schooling upon predictive accuracy. In addition, secondary relationships between political attitude and optimism and age will also be examined so as to more fully account for variation (or the lack of it) in predictive accuracy. This, then, is the next task to be undertaken.

FOOTNOTES

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[1] This is not to suggest that there is always complete correspondence between what one thinks or says and what one does. This fallacious conceptualization of perfect correlation between words and deeds has been amply criticized by Nettler (1970, 1972) and Alcock and Defleur (1972). Our concern is with the evidence which suggests that prediction, however simplistic and mundane, exists as a precondition for and partial determinant of action. That the individual's acts do not follow logically from his predictions or are unrelated to those predictions should in no way cast shadows on our present discussion.

[2] Cf. Bross (1953) and Theil (1965). Bross develops a classification based on the assumed nature of change in the social event being forecast. For example, persistence predictions involve assumptions that there will be no substantial change over time; trajectory predictions assume that the extent of change is stable and, hence, a trend may be discerned. Inherent in cyclical predictions is the assumption that patterns of change are recurrent over time. Analogue forecasts represent a correlational and, often, causal assumption with respect to the relationship between changes in two distinct events; such predictions assume that a change in event A is, at minimum, associated with a corresponding change in event B.

Lewinsohn's classification appears to be superior to Bross' for two major reasons. The latter's classificatory system is based on one characteristic only -- the assumed nature of change. Lewinsohn takes into account the cognitive operations upon which the various predictive methods are based (intuitive, deductive, etc.); he specifies in some depth the logical or illogical bases for these various operations. In so doing, Lewinsohn constructs a classification system which is more sophisticated in accounting for differences in methodology and logic amongst the different predictive processes. Secondly, by the very act of specifying applicable fields for the various predictive methods, Lewinsohn is better able to insure categories which are exclusive.

[3] A discussion of clinical and statistical prediction will be developed later within this chapter.

[4] We are reminded of Nettler's (1972) argument in which he distinguishes between having information, having knowledge and having know how. This distinction provides the necessary rationale for asserting that an increase in schooling may not lead to a proportionate increase in predictive accuracy.

CHAPTER II

CONSTRUCTING A CONCEPTUAL MODEL

In the previous chapter, the relationships between what may be called the independent variables (schooling, optimism and political orientation) and the dependent variable (predictive accuracy) were considered in the light of available research and discussion materials. This chapter seeks to gain insight into the possible relationships between the independent variables. Specifically, we shall confine ourselves to speculating about any connection between schooling and optimism as well as between optimism and chronological age.

Following completion of this task, five hypotheses will be generated with the intention that they be used to test empirically for significant relationships among the five variables: predictive accuracy, schooling, optimism, political orientation, and chronological age. From these hypotheses, a model will be constructed which may assist us in conceptualizing the aforementioned relationships.

A. Secondary Relationships Among Independent Variables

Little evidence exists regarding the association between schooling and optimism. Sisk (1970) believes that the educated man puts faith in technological advancements, man's rationality and his reason. To the extent that these beliefs are internalized, the educated man may overestimate their impact upon events occurring in the world. We recall our discussion of the common belief that more education will lead to the solution of social problems and, implicitly, to "a better world." This perspective is itself optimistic in nature. It appears to buttress our speculations that schooling may be significantly correlated with an optimistic outlook.

The notion that age and optimism may be inversely correlated has been suggested by psychologists such as Erikson (1963), whose treatise on the eight stages of man posits the possibilities of increased despair as the individual ages. Similar predictions of increased despair have been made with reference to relative deprivation of novel social stimuli as one grows older.

Empirical research on aging and optimism further substantiates our suspicions that the two may be inversely correlated. In a study of prison inmates (Gillespie and Galliher, 1972), a distinct trend toward increasing pessimism in inmates' outlooks was noted as they grew older. "Interviews with the inmates of a large midwestern state penitentiary show that young and middle-aged inmates tend to give optimistic definitions of aging in prison, claiming either that prison 'matures' them or that it 'preserves' them, while the inmates in their sixties and seventies offer a more pessimistic view, saying that prison has made them age faster than is normal" (Gillespie and Galliher, 1972: 479).

Chinoy's (1965) research presents data on aging and optimism which parallels the findings of Gillespie and Galliher. His interviews of automobile workers with respect to their notions of employment opportunities and their personal futures reflect a progressive decline of optimism through young adulthood, middle-age and old age. This direct, inverse relationship between optimism and chronological age has also been echoed by those writers engaged in chronicling the involvement of youth in social action programs designed to provide for "a better world." Block *et al*. (1968), Keniston (1966) and McGuigan *et al*. (1968) share the view that young people are more likely to be optimistic about the possibilities for positive societal changes than are their parents, teachers, or employers. While the progressive variations in optimism noted by Gillespie and Galliher and Chinoy were with regard to "future self-portraits," the above-mentioned studies of youth would seem to suggest that this optimistic or pessimistic view may carry over to perceptions of world events as well.

B. Generating Hypotheses

From the preceding discussion, we may summarize our speculations and rephrase them in the form of specific hypotheses. This will facilitate the formulation of a conceptual model in this chapter and allow us to construct null hypotheses to be assessed in later chapters.

Hypothesis 1: There is no significant relationship between schooling and predictive accuracy.

The predominant, recurring theme in our discussion of schooling and predictive accuracy has been focused more on knowledge and education than on schooling *per se*. Our thesis has been that more knowledge does not necessarily imply greater predictive accuracy. We have also held that the use of the term "knowledge" has been in error. What has been counted in most research is "schooling," rather than knowledge or information.

Hypothesis 2: There is a significant, positive relationship between political conservatism and predictive accuracy.

With respect to this second hypothesis, we have found substantial comment to indicate that there is, indeed, a basis for expecting covariation in the two variables identified above. A dilemma arises, however, inasmuch as the second hypothesis indicates the direction of the relationship; no empirical evidence or theoretical discussions point specifically to this hypothesized relationship. We have chosen to speculate on the direction on the strength of Gabor's (1971) discussions. He refers to the inaccurate predictions of socialist intellectuals and to the inability of liberals to assess the future accurately. While fully recognizing that Gabor's assertions are subjective observations, we nevertheless have chosen to follow this direction in constructing the hypothesis.

Hypothesis 3: There is a significant, negative relationship between optimism and accuracy in predicting social events.

Again, we have specified the direction of the hypothesized relationship. In this case, however, referral to pertinent evidence most clearly substantiate our attempts to indicate direction.

Hypothesis 4: There is a significant, positive relationship between schooling and optimism.

Hypothesis 5: There is a significant, negative relationship between chronological age and optimism.

C. Constructing the Model

The formulation of a model which clearly maps the interrelationships of the five variables of interest to us raises many questions. The model that we shall propose and the method by which we shall test the feasibility of our earlier speculations correspond to the methodology commonly employed in causal modeling and path analysis. In order to allay substantial debate over competing notions of causality, a brief summary of the theoretical background of causal modeling will be presented.

Perhaps the most expansive discussion of causal thinking as it relates to modeling has been undertaken by Blalock (1964). Blalock presents a conception of causation which is essentially a synthesis of two extremely different points of view. He points out that Philipp Frank has argued that "... causal laws are essentially working assumptions or tools of the scientist rather than verifiable statements about reality" (Blalock, 1964: 12). When these assumptions appear to be violated, the scientist simply reformulates them so as to account for new facts and other disturbing variables. In this way "... one can thus always introduce new postulated properties or variables in such a way that causal laws cannot possibly be negated" (Blalock, 1964: 12). Blalock notes that Bertrand Russell has maintained that causal laws are only applicable in completely isolated systems. That is, certain isolating assumptions must be formulated regarding the nature of the particular system under examination if the relationships among variables are to be evaluated empirically. "It is because of this hypothetical nature of causal laws that they can never be tested empirically, in the strictest sense of the word. Since it will always be possible that some unknown forces may be operating to disturb a given causal relationship, or to lead us to believe a relationship exists when in fact it does not, the only way we can make causal inferences at all is to make simplifying assumptions about such disturbing influences" (Blalock, 1964: 12).

Given these problems, and Blalock's proposed amelioration of them, he suggests that social scientists should follow Herbert Simon's suggestion that causality should be conceptualized in terms of simplified models which involve a finite number of variables. "Having thus committed ourselves to this particular choice of variables, we in effect admit that had another set been selected, our model might have looked quite different. In other words, there is nothing absolute about any particular model, nor is it true that if two models make use of different variables, either one or the other must in some sense be 'wrong'" (Blalock, 1964: 15).

Having now established a rationale for the construction of a model which represents a closed system of variables, the issue of determining the causal relations among the variables in this conceptual system is still of paramount importance. Stinchcombe (1968) suggests that there are four properties of a relationship which must be observed before a causal relation between two variables may be recognized as such. Different values for the causal (independent) variable must be observable; covariation of the independent and dependent variables must be demonstrated; causal direction must be specified; and nonspuriousness must be demonstrated. While the first two criteria for assigning causality are easily enough demonstrated, the latter two conditions pose problems. The nature of data collection and observation in non-experimental research such as this study prevents us from utilizing temporal and treatment controls that normally prove or disprove causal direction. Further, we shall be able to demonstrate nonspuriousness only with respect to our closed, hypothetical system. To this extent, assignation of causality is most difficult. Indeed, Nettler (1970) has discussed, at length, the difficulties in selecting and assessing causal criteria; it is not surprising that such difficulties plague our own endeavors.

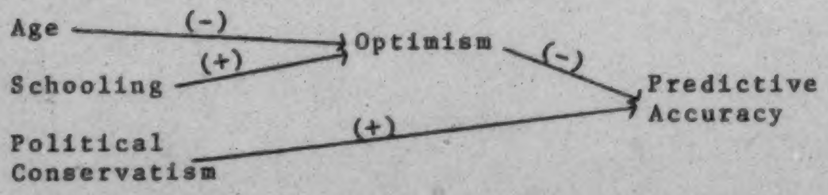
We assert, however, that the benefits of using a causal modeling approach may outweigh the costs of discarding it because of the difficulties inherent in that approach. Analysis of the data by means of a multiple regression technique yields both product-moment correlations, which describe the symmetrical association between two variables, and path coefficients which provide some information on the asymmetric, causal direction of the relationships. In so doing, path coefficients afford some evidence for the third causal criteria mentioned by Stinchcombe. This leaves only the issue of nonspuriousness in serious question. Again, we emphasize that by nature of our assumption that we are dealing with a closed system, this issue cannot be fully resolved.

Given these advantages of a causal model approach, it seems advisable to utilize it in order to more clearly describe the nature of the interrelationships among variables. Our concern, then, is not so much with demonstrating causality, but in gaining more information about the statistical relations among these variables. In this manner, proposed methods for undertaking experimental research for the study of causal relationships between optimism, political orientation, and predictive accuracy may be suggested in the light of our findings here.

Returning to the hypotheses which have been constructed by reference to previous empirical research and theory, we may now present our conceptual model with only secondary importance placed on causal considerations; we intend that it be utilized primarily as a descriptive and explanatory device. A diagram of this model follows:

DIAGRAM 1

HYPOTHESIZED CONCEPTUAL MODEL



This model would appear to be consistent with the hypothesized relationships made earlier. In the model diagram, positive signs refer to positive path coefficient values; negative signs, to negative values. Where no arrows exist between variable labels, there is no hypothesized relationship. As can be seen, all posited relationships are direct except where optimism is predicted to operate as an intervening variable. This will somewhat complicate analysis but statistical techniques will be employed to deal with this situation.

CHAPTER III

METHODOLOGY AND DATA ANALYSIS

The discussion which has been presented to this point represents an attempt to integrate previously developed theoretical and empirical arguments regarding the nature of prediction and its correlates. To assess the relative accuracy of our own formulation, the hypotheses which we have developed must now be empirically tested. What follows is a description of the procedures employed in this task. In so doing, certain methodological issues of special import to this study will be considered in order to substantiate the course of action which was chosen. As well, the results of the data analysis and some discussion of any unanticipated findings will be presented.

A. Data Collection Technique

Our concern with studying prediction in the social realm restricted our selection of research procedures to some type of non-experimental, longitudinal research design. In order to assess the accuracy of respondents' predictions, individuals would be asked to predict specific events at one point in time; at a suitably later date, these predictions would be compared with the events as they actually occurred.

In this way, we would be able to attain some measure of predictive accuracy. Information on conservatism, optimism, age, and schooling could be collected at the first point in time.

Obviously, our choice of research designs was limited to some nature of survey technique. Specifically, we could initiate our own research collection or make use of survey research, appropriate to our specific concerns, which had already been collected by other agencies. The advantages of a secondary analysis of survey research data have been espoused by Hyman (1972). He suggests that the existing wealth of unanalyzed social data makes primary survey research redundant in many instances. The expenditure of time and money in collecting one's own data is often wasteful when the required information may already exist in the data banks of various research agencies.

With reference to our own situation, other factors came under consideration. The principal aspect of primary research data collection which we originally favored was the fact that we would be able to construct a questionnaire which fit the idiosyncratic needs of our study. Our concern with attempting to map the interrelationships between predictive accuracy, optimism, conservatism, schooling, and age was not perceived to be common in the sociological and social psychological research arenas. Thus, if we were to utilize previously collected data, we would, in all probability, have to compromise on the quality of the indicators of optimism, conservatism, and predictive accuracy. Furthermore, the construction of a questionnaire specifically designed for our concerns would provide the opportunity to pre-test the indicators and assess their quality in terms of validity and reliability.

However, it was this very opportunity which presented the first obstacle in conducting our own survey research. Pre-testing questionnaire items entails selecting a large sample of respondents, administering the questionnaire, and then evaluating the items on the basis of response patterns. Such a procedure involves considerable expenditures of time and money. Indeed, when this is added to the cost of the actual survey, the costs appeared to be beyond our means. Moreover, the science of sampling involves many resources unavailable to us: a large sampling frame which would provide the means to survey a representative cross-section of the Canadian and/or American population. In addition, the evaluation of predictions through primary survey research would necessitate the passage of a lengthy period of time (as much as five years, in some cases) before predictions could be evaluated as to their accuracy. Clearly, the pecuniary and temporal demands of primary survey research exceeded our supply.

Our decision to make use of survey research data which had already been collected appeared, then, to offer more benefits than disadvantages. While reducing the cost of the research and curtailing the time taken to complete data collection, we were assured of using research which had used pre-tested items presented to a well-developed sample of respondents by experienced interviewers. Finally, we would be able to use information from more than one survey; hence, our ability to gain more information was substantially increased.

B. Description of the Data Sets

Having decided to make use of secondary analysis of research, surveys were selected from Canadian Institute of Public Opinion surveys held by the Political Science Department, University of Alberta, and from research carried out in the United States by the National Opinion Research Center, Roper Associates, and American Institute of Public Opinion. The American data were provided by the Roper Public Opinion Research Center. Data sets were selected with reference to the following criteria:

1. Demographic information on age and schooling must be available,

2. Questionnaire items which could be conceived of as indicators of optimism must be included in the data collection,

3. The data sets should include items which give indications of the respondents' political preference or degree of conservatism, and

4. The respondents should have been asked to predict some future social event the occurrence of which could be evaluated.

Items were considered to be indicators of conservatism if they elicited opinions from respondents on matters of racial tolerance, pacifism, political party preference, or attitudes towards communism and capitalism. In most instances, such items could be located in the various studies which were selected. The search for indicators of optimism was a much more difficult task. While social psychological scales on conservatism have been frequently used in political psychology (Comrey and Newmeyer, 1965), little research has directly concerned itself with measuring optimism. Most empirical work has examined optimism as a secondary effect which has unexpectedly arisen in research on religiosity and political cynicism. For example, Sanford (1946) found that subjects who indicated affiliation with religious organizations also exhibited greater general optimism than unaffiliated respondents. Given the lack of direction in constructing a reliable optimism scale, we chose to proceed from the definition of optimism as any attitude characterized by faith, hope, or cheerfulness. This definition, proposed by Chaplin (1968: 335), implies that an optimistic attitude or viewpoint is a subjective evaluation of perceived situations such that the positive or "good" dimensions of the perceived situations are accentuated. Thus, questionnaire items which asked the respondent to speculate about "how much better" the world will be in the future were taken to be indicators of optimism as were responses regarding prospects for peace, longer life-spans in the future, and improving social conditions.

Questions on the opinion poll interview schedules which were considered as measures of predictive accuracy fulfilled two criteria. First, the events about which the respondents were asked to predict were verifiable and, second, the events generally related to occurrences of a social nature such as election outcomes, economic issues, and international affairs.

On the basis of these considerations, nine research data sets were selected for analysis and hypothesis testing. Three sets contained data based on samples of the Canadian population and six were selected from American sources. Table 2 documents the source and year of each study, the sample size, and the number of indicators of predictive accuracy, optimism, and conservatism for the respective study. Appendix I lists these indicators and, in the case of the prediction questions, the accurate response possibility. In all data sets, schooling and chronological age were obtained. All surveys chosen for analysis from Canadian data are based on a quota sample representative of the nation by province, sex, age, and education. For data sets on American respondents, sampling was on the basis of quotas by

TABLE 2

DESCRIPTION OF SELECTED DATA SETS FOR ANALYSIS

Identification	Date of Survey	N	Prediction Items	Optimism Items	Conservatism Items
CIPO 279[a]	November, 1959	686	7	13	4
CIPO 282	May, 1960	728	5	1	2
CIPO 317	January, 1966	657	4	1	3
NORC 330[b]	December, 1963	1401	10	3	1
RCOMO 524[c]	October, 1971	1499	2	1	14
AIPO 621[d]	December, 1959	1560	10	8	4
AIPO 721	December, 1965	3532	6	4	7
AIPO 772	December, 1968	1497	6	4	2
NORC 857	June, 1965	1469	2	1	5

[a] CIPO: Canadian Institute of Public Opinion (Canadian data).

[b] NORC: National Opinion Research Center (American data).

[c] RCOMO: Roper Associates, Inc., Commercial Study (American data).

[d] AIPO: American Institute of Public Opinion (American data).

geographic areas, community size, sex, age, and education.

C. Constructing Composite Indices

We have already noted that, for many of the chosen data sets, we were able to select more than one possible indicator of optimism, conservatism or predictive accuracy. Given this situation, we were faced with selecting those items which together formed a reliable composite index of each of the three variables of major interest. In order to facilitate such a selection, we first dichotomized the responses for each prediction, optimism, and conservatism indicator. Thus, an inaccurate prediction was assigned the value of one; accurate responses were coded with a value of two. Similarly, pessimistic responses and liberal or radical responses were assigned "ones" while conservative and optimistic responses were coded as "twos." Intercorrelations of the sets of conservatism indicators and optimism indicators were computed on the basis of Pearson's correlation coefficient.[1] Intercorrelations of predictive accuracy indicators were unnecessary because we had no basis for expecting any interrelationships of any magnitude between such indicators. That is, it seemed quite plausible that ability to predict one social event could well be independent of the ability to predict another. Moreover, our interest was in the respondents' abilities to predict a range of events. Had we retained correlated items only, we might have substantially limited the range of topics to be assessed regarding the public's abilities to accurately predict them.

Returning to the intercorrelations of conservatism and optimism items, we attempted to select items for the construction of unidimensional optimism and conservatism scales on the basis of maximizing the correlation coefficient values in the correlation matrices as well as maintaining a satisfactorily high reliability coefficient.

Our interest in reliability was more specifically directed towards determining whether each particular item could be conceived to be a measure of the same dimension. That is, we were concerned with the equivalence of items. "It is assumed that when several items are summed into a single attitude scale, the items are measuring the same underlying attitude. In this sense, each item can be thought of as a measure of the attitude. Reliability estimates which measure the equivalence of each item as an indicator of an underlying attitude are called ... measures of equivalence" (Bohrnstedt, 1970: 86). The most popular measure of equivalence or internal consistency of multiple indicators is Cronbach's alpha whose computational formula is:

$$\alpha = \frac{n}{n - 1} \left[1 - \frac{\sum_i \sigma^2_{Y_i}}{\sigma^2_X}\right]$$

where $\Sigma\sigma_Y^2$ equals the sum of the variances of each item, n is the sum of items, and σ_X^2 is the sum of the variance of the total scale. Cronbach's alpha varies from zero to one in value. Thus, the value of the reliability coefficient indicates the probability of a respondent's answering all indicators of the same construct in the same way.

Having selected items for the construction of optimism and conservatism indices, we then proceeded to formulate the scales. Assuming that these dichotomous items could be additively combined, scales were constructed through the formula:

$$S = \frac{\Sigma X_i}{N_v} (N_t) \qquad \text{when } N_v > \frac{N_t}{2}$$

$$\text{and} \qquad S = 0, \qquad \text{when } N_v < \frac{N_t}{2}$$

For this formula, S refers to the scale value for each respondent, ΣX_i equals the sum of the subject's responses, N_v is the number of valid item responses and N_t equals the total number of items in the scale. Where the subject responded to less than half of the items, a scale value of zero was recorded. For a scale of three items, then, values could range from three to six; scale values of zero would be classified as missing values and excluded from further computations.

The intercorrelations of items for each conservatism and optimism index for the nine studies are presented with their respective coefficients of reliability in Appendix II. Because intercorrelations of predictive accuracy items and reliabilities were unnecessary, such information has not been presented. For all studies, the predictive accuracy items listed in Appendix I were all used in constructing the predictive accuracy scales.

D. Selection of a Data Analysis Technique

Our interest in attempting to assess the relative impact of various social and sociopsychological variables on predictive accuracy leads us towards describing relationships rather than explaining them. On the basis of such a description derived from an analysis of research data, we may then be able to advance possible explanations of the observed relations. In this we follow Blalock's (1960: 273) suggestion that, "When interest is focused primarily on the exploratory task of finding out which variables are related to a given variable, we are likely to be mainly interested in measures of degree or strength of relationship such as correlation coefficients. On the other hand, once we have found the significant variables we are more likely to turn our attention to regression analysis in which we attempt to predict the exact value of one variable from the other."

Traditionally, the minimum requirements for using regression techniques for statistical analysis involved the ability to distinguish independent variables from dependent ones and the sophistication to measure the variables using an interval level of measurement. While the first requirement was easily met, the second posed serious difficulties. In some cases, only one indicator could be found for optimism or conservatism in a specific study. Inasmuch as these indicators contained dichotomous response possibilities only, such studies would force us to use multiple regression analysis on some ordinally measured variables. Similarly, data on schooling for all data sets had been encoded such that the measurement was an ordinal one. However, Blalock (1964) has suggested that, in instances where the researcher is confronted with using ordinal data, he may assume that ordinal techniques of analysis will lead to the same conclusions, given the same causal model. In support of Blalock, Lyons (1971) has advanced the view that multiple regression analysis can be legitimately applied to ordinal data. More specifically, he has suggested that the use of dichotomous data in regression and path analysis is a methodologically sound procedure, especially if the ordinal or nominal, discontinuous variables are exogenous ones.[2] Such is the case for all data sets which we proposed to analyze.

E. The Principles of Multiple Regression Analysis

A brief discussion of the principles involved in multiple regression analysis seems advisable at this point.

Nie et al. (1970: 175) have offered a concise description of the technique: "Multiple regression is an extension of the bivariate correlation coefficient to multivariate analysis. The correlation coefficient, or normalized simple regression coefficient, allows the researcher to measure the linear relationship between one independent variable and a dependent variable. Multiple regression allows one to study the linear relationship between a set of independent variables and a number of dependent variables while taking into account the interrelationships among the independent variables. If the simple correlation coefficient is viewed as the continuous analog of two-way cross-tabulation, then multiple regression is the continuous analog of a n-way cross-tabulation."

Employing the principle of ordinary least squares, multiple regression produces a linear combination of independent variables which will correlate as highly as possible with the designated dependent variable. Multiple regression analysis produces a linear equation of the form:

$$D = b_1I_1 + b_2I_2 + b_3I_3 + c + r$$

where D is the dependent variable, I_i represents each independent variable, b_i is the respective, unstandardized regression coefficient for each I_i, c is a constant and r is the error term or residual. The unstandardized coefficients represent the best fitting weightings for their respective independent variables such that they minimize the standard deviation of the residual term. Any other values of b would enlargen the value of that standard deviation and would therefore be less than optimal. Path coefficients, or standardized regression coefficients, are computed by multiplying the unstandardized coefficient by the ratio of the standard deviation of the independent variable to the standard deviation of the dependent one. Thus, if X_i is a dependent variable, X_j is an independent variable in the regression equation, and b_{ij} is the unstandardized regression coefficient of the two variables, then the standardized regression coefficient or path coefficient, P_{ij}, will equal $\frac{\sigma j}{\sigma i} X b_{ij}$. Path coefficients range in value from minus one to plus one; a coefficient P_{ij}, "... measures the fraction of the standard deviation of the endogenous [dependent] variable (with the appropriate sign) for which the designated [exogenous or independent] variable is directly responsible in the sense of the fraction which would be found if this factor varies to the same extent as in the observed data while all other variables (including residual variables) are constant" (Land, 1969: 8-9). Path coefficients thus serve to indicate the proportion of variance in the dependent variable which is solely attributable to variance in a specific independent variable controlling for all other variables in the model. So, by using path coefficients, one may compare the relative impact of different independent variables upon the same dependent variable. Obviously, this function is of great value to us in the search for correlates of predictive accuracy.

F. Testing the Hypotheses

Having computed path coefficients for the hypothesized relationships in all nine studies, we must attempt to assess the five major hypotheses which were developed in the previous chapter. To accomplish this, each hypothesis will be discussed individually with reference to the nine analyzed studies. That is, only those relationships relevant to the content of each hypothesis will be discussed. In a subsequent section, unanticipated relationships which appeared in the analysis of the data sets will be discussed.

For each data set, the multiple regression analysis provided intercorrelations between all five variables under examination (age, schooling, optimism, conservatism, and predictive accuracy). As well, path coefficients were also computed for selected relationships of concern to us; significance tests[3] were also calculated using the F-distribution. This information is presented is summary form in Appendix III.

Hypothesis 1: There is no significant relationship between schooling and predictive accuracy.

Six of the nine data sets (CIPO 282, CIPO 317, RCOMO 524, AIPO 721, AIPO 772 and NORC 857) exhibit negative or zero path coefficients resulting from the regression of predictive accuracy on schooling (see Table 3). While our original hypothesis predicted a zero relationship between these two variables, it should be noted that all three of the negative path coefficients approach zero. Further, the small negative path coefficients serve to substantiate strongly our previous assertion that the relationship between schooling and predictive accuracy is often over-estimated. Moreover, the path coefficient for AIPO 279 is so low as to approach zero. We may argue, then, that seven of the nine data sets examined demonstrate the absence of any relationship between schooling and predictive accuracy.

Two studies (NORC 330 and AIPO 621) yield significant, positive path coefficients. With regard to NORC 330, it should be noted that all items which were used as indicators of predictive accuracy refer to the possibilities and ramifications of nuclear war. We suggest that the relatively strong relationship (p = .21158) may be due to the existence of a particular response set on these indicators. Specifically, items 5 through 11 (see Appendix I) do not appear to be independent of one another; all refer to the type of defense measures which might have been instituted to defend against potential nuclear attack. Given this circumstance, it is possible that these seven items tend to bias the predictive accuracy scale. That is, if we grant that schooling and predictive accuracy are positively

TABLE 3

CORRELATION COEFFICIENTS AND PATH COEFFICIENTS FOR THE REGRESSION OF PREDICTIVE ACCURACY ON SCHOOLING

Identification	Correlation Coefficient	Path Coefficient
CIPO 279	-.00827	.01362
CIPO 282	-.00951	-.03433
CIPO 317	.00629	0
NORC 330	.19028	.21158
RCOMO 524	.01490	0
AIPO 621	.25542	.23212
AIPO 721	.00538	-.00746
AIPO 772	-.00900	-.01737
NORC 857	.12164	0

related to some extent in this particular study, we may say that the relationship has been artificially enlarged by intercorrelations among the items included in the composite index used as the dependent variable. There is some support for this idea. We may note that the predictive accuracy scale for this study has ten items and, thus, may vary from 10 to 20 for any respondent's score. While the mean for the sample on this scale is 15.06, the standard deviation is a substantial 1.85. This amount of dispersion seems to support our supposition that there exists a potential biasing effect.

Turning to AIPO 621, we again find a relatively high path coefficient (p = .23212) linking schooling to predictive accuracy. However, an examination of the predictive accuracy items does not indicate that possible intercorrelations between scale items can explain this result. For this study, we note that schooling is positively related to conservatism (p = .18426) and to optimism (p = .13631) while the path coefficients for optimism and predictive accuracy and conservatism and predictive accuracy approach zero. Application of Land's (1969) technique for determining indirect effects of independent variables upon the dependent variable via various other variables provided no indication that there existed an indirect path between schooling and predictive accuracy which would account for this apparent relationship. Similarly, partial correlation analysis yielded no statistical explanation. This suggests that, for this particular study, our conceptual model may not be functionally appropriate.

In summary, we have found little or no relationship between schooling and predictive accuracy in seven of the nine studies examined. Although the remaining two studies pose some problems in evaluating our first hypothesis, we may conclude with confidence that schooling is not related to predictive accuracy.

Hypothesis 2: There is a significant, positive relationship between political conservatism and predictive accuracy.

Table 4 indicates that six of the analyzed data sets exhibit path coefficients and correlations consistent with our second hypothesis. While these coefficients are, in general, not indicative of a strong positive relationship, they do point to the fact that conservatism is a more important factor than schooling as a correlate of predictive accuracy.

It should be noted that the conservatism scale appears to measure one of two specific dimensions. In six of the studies (CIPO 279, CIPO 282, CIPO 317, NORC 330, AIPO 621, and AIPO 772), the scale items refer specifically to the respondents' political party affiliation and support. The three remaining studies (RCOMO 524, AIPO 721, and NORC 857) contain indicators of a more general political attitude.

TABLE 4

CORRELATION COEFFICIENTS AND PATH COEFFICIENTS FOR THE REGRESSION OF PREDICTIVE ACCURACY ON CONSERVATISM

Identification	Correlation Coefficient	Path Coefficient
CIPO 279	.01141	-.01200
CIPO 282	.21498	.20448
CIPO 317	-.21757	-.23012
NORC 330	.10803	.06502
RCOMO 324	.16594	.17137
AIPO 621	.04402	.01633
AIPO 721	.00526	.01382
AIPO 772	0	0
NORC 857	.02602	.02607

These items refer to respondents' support of foreign and domestic policy actions, attitudes towards integration, and self-reports of the respondents' degree of liberalism or conservatism. While the former items seem to be indicators of a more pragmatic nature (support of parties and political figures), the latter refer to more abstract, ideological characteristics of the respondents.

Three of the studies which indicate a zero or negative relationship due to the regression of predictive accuracy on conservatism are those which involve party preference as indicators. The strong negative relationship in CIPO 317 (p = -.23012) seems to be attributable to the specific content of the predictive accuracy items. All four items require the respondents to predict the future strength of Canada's four major political parties. In this case, it so happened that the traditionally conservative parties (the Progessive Conservative and Social Credit Parties) both faired poorly in the election subsequent to these predictions. In effect, then, self-identified liberals appear, in this case, to have some advantage in predicting accurately if we assume that their political party affiliation could influence their predictions. In a sense, then, this particular study points to the conclusion that political ideologies do have some impact upon predictive accuracy. It should be stressed that this is the only study in which liberals clearly exhibit a better record of accuracy than conservatives.

That there is a zero relationship between conservatism and predictive accuracy in one study (AIPO 772) may be explained by the fact that only one party preference indicator was utilized. Moreover, this indicator may be less than adequate for discriminating between liberal and conservative political orientations. The data for this particular study was collected in December, 1968, shortly after the U.S. Presidential election. In that election, there were three major presidential contestants: Hubert Humphrey, Richard Nixon, and George Wallace. It is known that Wallace, running as an independent, received electoral support from both the Democratic and Republican Parties. To this extent, party preference in this election may be a mixed indicator of liberal or conservative positions. Wallace's platform presented issues which appealed to citizens whose views tended to fall on the right end of the political spectrum. The employment of this item, then, may only indicate some slight variation between a very liberal position and a "middle of the road" position. This might be said of any of the conservatism scales which include party preference items; however, we suggest that a scale of even two such items greatly enhances its discriminability. If, in both items, the respondent is to choose between the Democratic Party and the Republican Party, it is apparent that his combination of choices will be increased to three: Democrat-Democrat, Democrat-Republican (or vice versa) or

Republican-Republican.[3] Given the characteristics of these parties, the sequence just described provides a reasonable three-point ordinal scale of liberalism-conservatism. Also, the potential variation in the independent variable under consideration is increased, thus militating against the possibility of a zero relationship. These two problems with the specific indicator of conservatism for AIPO 772 lead us to question the merit of this particular finding.

Once again, we find ourselves prepared to accept the second hypothesis on the basis of the results of the data analysis. For the second time, we may do so with a great deal of certainty.

Hypothesis 3: There is a significant, negative relationship between optimism and predictive accuracy.

Our hypothesis that optimism is negatively related to predictive accuracy is confirmed in five of nine instances (see Table 5). For three of these studies, the negative relationships are statistically significant. Particularly outstanding is CIPO 279 ($p = -.26008$), whose optimism index ($\alpha = .54$) is composed of seven items. The path coefficients for AIPO 721 ($p = -.07997$) and CIPO 317 ($p = -.08552$), while being substantially lower, are significant also. In the latter case, this is no doubt due to the existence of only one dichotomous indicator of optimism which may attenuate the path coefficient.

Of the studies which place the validity of our third

TABLE 5

CORRELATION COEFFICIENTS AND PATH COEFFICIENTS FOR THE REGRESSION OF PREDICTIVE ACCURACY ON OPTIMISM

Identification	Correlation Coefficient	Path Coefficient
CIPO 279	-.25982	-.26008
CIPO 282	-.03597	-.03244
CIPO 317	-.07008	-.08552
NORC 330	.05365	.03439
RCOMO 524	.00606	.02014
AIPO 621	.05825	.02217
AIPO 721	-.07760	-.07997
AIPO 772	.05293	.06170
NORC 857	-.01110	-.01121

hypothesis in doubt, only AIPO 621 (p = .02217) and NORC 330 (p = .03439) regress predictive accuracy on an optimism index of more than one item. Further, only the path coefficient for the latter study is significant. However, given that its index is constructed from two items only, the positive path coefficient for this study may be a questionable representation of the true nature of the association between optimism and the ability to predict accurately.

While the results of the statistical analyses appear to be rather diverse, two thoughts recommend acceptance of the hypothesis. A survey of the path coefficients for this particular hypothesis indicates that five are negative in sign (three of which are significant) while four are positive (with only one instance of statistical significance). The negative relationships, which confirm the third hypothesis, are evidently much stronger. This encourages acceptance of the hypothesis that optimism and predictive accuracy are negatively related. Secondly, CIPO 282, NORC 857, and CIPO 317 all exhibit negative path coefficients which may be attenuated due to a restriction in potential variation of the optimism indicator inasmuch as only one item makes up each of their respective optimism scales. We suggest that, had more items been found with which a broader scale might have been constructed, the potential variation would have increased. Such circumstances may well have led to larger coefficients in support of the hypothesis. Under these circumstances, we deem it proper to accept the third hypothesis with only minor reservations.

Hypothesis 4: There is a significant, positive relationship between schooling and optimism.

In testing this hypothesis, we first note that five of the studies demonstrate a negative relationship between schooling and optimism (see Table 6). Upon closer examination, however, we see that four of these studies are ones in which the optimism indicator was constructed from only one item. On the other hand, the three significantly positive relationships involve optimism scales which were composites of not less than four items in each case. This seems to imply that the reliability of the negative path coefficients is doubtful. If we consider only those data sets whose optimism variables are made up of multiple indicators, we observe that four of the studies (CIPO 279, NORC 330, AIPO 621, and AIPO 772) yield path coefficients indicating relatively strong positive relationships between optimism and schooling. Only AIPO 721 exhibits a negative relationship.

While casting aside, for the moment, those studies containing single indicators of optimism may be somewhat presumptuous, we assert that consideration of multiple item studies allows us to observe a discernible trend in substantiation of the hypothesis. On the basis of this observation, we propose to accept the hypothesis that

TABLE 6

CORRELATION COEFFICIENTS AND PATH COEFFICIENTS FOR THE REGRESSION OF OPTIMISM ON SCHOOLING

Identification	Correlation Coefficient	Path Coefficient
CIPO 279	.12047	.12739
CIPO 282	-.00847	-.01447
CIPO 317	-.00531	.02346
NORC 330	.01209	.05761
RCOMO 524	-.08943	-.04581
AIPO 621	.14091	.13631
AIPO 721	-.14023	-.15364
AIPO 772	.12868	.12904
NORC 857	-.06467	-.01967

schooling and optimism are positively related.

Hypothesis 5: There is a significant negative relationship between chronological age and optimism.

The results of the data analysis with respect to this hypothesis appear to be simple to interpret. Four studies (CIPO 317, NORC 330, RCOMO 524, and NORC 857) exhibit a positive relationship while the remaining studies demonstrate relationships approaching zero (see Table 7). We can only conclude that age and optimism are positively related and, therefore, reject our fifth hypothesis.

G. Observed Correlates of Conservatism

Conservatism and optimism are negatively related in five of nine studies. Because it is hardly possible to determine which of these attributes is temporally prior to the other, a discussion of this relationship in terms of path coefficients (which incorporate a uni-directional interpretation) would be irrelevant. For this relationship, then, analysis and conclusions must be based on the symmetrical correlation coefficient. Of the four data sets which produce non-negative relationships between optimism and conservatism, AIPO 772 exhibits a zero relationship and the correlation for NORC 857 approaches zero (see Table 8). This leaves only two studies in which the two variables under consideration correlate positively.

TABLE 7

CORRELATION COEFFICIENTS AND PATH COEFFICIENTS FOR THE REGRESSION OF OPTIMISM ON CHRONOLOGICAL AGE

Identification	Correlation Coefficient	Path Coefficient
CIPO 279	.03704	.05625
CIPO 282	-.01742	-.02438
CIPO 317	.12081	.11693
NORC 330	.14224	.16121
RCOMO 524	.15941	.15280
AIPO 621	-.04022	0
AIPO 721	0	0
AIPO 772	-.07426	-.07488
NORC 857	.15936	.15533

TABLE 8

CORRELATION COEFFICIENTS BETWEEN CONSERVATISM AND OPTIMISM

Identification	Correlation Coefficient
CIPO 279	-.09522
CIPO 282	-.02620
CIPO 317	-.08713
NORC 330	-.01415
RCOMO 524	-.04180
AIPO 621	.05181
AIPO 721	.09613
AIPO 772	-.07426
NORC 857	.00449

If we examine the composite indices of the studies demonstrating negative relationships between optimism and conservatism, we see that four of the five contain scales constructed from one item only. It is possible, therefore, that these negative values may be attenuated due to lack of possible variation. On the basis of this possibility and the observation of several data sets demonstrating a negative correlation, we conclude that optimism and conservatism are negatively related.

This finding has been reported by other research. Robinson _et al_. (1969), in using the Rosenberg scale which purports to measure faith in people, suggest that it may be a reliable indicator of optimism. Rosenberg (1956) reports a negative relationship between faith in people and belief in the freedom of speech. Thus, this finding conforms to at least one previous study's results.

Age and conservatism are positively related in five of the data sets; four of these studies exhibit statistically significant path coefficients (see Table 9). Of the remaining studies, two (CIPO 282 and CIPO 317) have significant negative coefficients while AIPO 721 and AIPO 772 suggest that there is no relationship whatsoever between age and conservatism. The evidence appears sufficient to allow us to include this positive relation between age and conservatism in our conceptual model.

Schooling and conservatism are positively related in

TABLE 9

CORRELATION COEFFICIENTS AND PATH COEFFICIENTS FOR THE REGRESSION OF CONSERVATISM ON CHRONOLOGICAL AGE

Identification	Correlation Coefficient	Path Coefficient
CIPO 279	.01826	.02181
CIPO 282	-.11276	-.11883
CIPO 317	-.13375	-.13181
NORC 330	.11558	.16121
RCOMO 524	.10597	.13087
AIPO 621	.00904	.15150
AIPO 721	0	0
AIPO 772	0	0
NORC 857	.11908	.05488

four of the analyzed data sets. For AIPO 621 and AIPO 721, the path coefficients are significantly positive. Only NORC 857 exhibits a strong negative relationship between these two variables (see Table 10). This positive association may be explained by reference to the content of the conservatism items. In all the studies, with the exception of NORC 857, the majority of the indicators composing the multiple indices refer to political party preferences or economic policy issues. For the latter data set, two of the three items tap a racial discrimination dimension of conservatism.

Several researchers have suggested that education may correlate positively with conservatism on economic issues and with political party preference. Rush (1967), while controlling for income and occupation, found a positive relationship between education and right-wing extremism. Lipset (1963) found that John Birch Society supporters tended to be relatively well-educated, quantitatively speaking. Sears (1969) suggests that it should not be surprising that there is a modest positive correlation between education and conservatism inasmuch as the Republican Party in the United States has traditionally been perceived as the party of the businessman and the upper class. A similar situation exists in Canada with regard to the Progressive Conservative Party. This raises a question regarding the relative impact of occupational prestige and/or

TABLE 10

CORRELATION COEFFICIENTS AND PATH COEFFICIENTS FOR THE REGRESSION OF CONSERVATISM ON SCHOOLING

Identification	Correlation Coefficient	Path Coefficient
CIPO 279	-.00833	0
CIPO 282	.00908	-.02168
CIPO 317	.00492	-.02749
NORC 330	.13784	.05761
RCOMO 524	.02608	.05702
AIPO 621	.14113	.17967
AIPO 721	.11748	.13359
AIPO 772	0	0
NORC 857	-.22789	-.21166

income on conservatism. It may be that any positive relationship between education and conservatism might disappear if we were to control for either income or occupational prestige. Thus, our observation that schooling is positively related to conservatism may be tentatively accepted.

H. A Note on the Possibility of Statistical Interaction

The use of multiple regression analysis enables us to locate instances of statistical interaction between two variables. Specifically, if the correlation coefficient between two variables is opposite in sign to its respective path coefficient, we may suspect that there is some nature of statistical interaction.

This possibility arises if we closely examine the relationships between schooling and conservatism in Table 10. We see that the correlation coefficient for this relationship in CIPO 282 is a positive sign while its path coefficient is negative. Because the values of these coefficients are small, the sign reversal may be due simply to random error, but the possibility still exists that the interaction is significant. Further examination of this interaction would have required the generation of bivariate cross-tabulation in order to assess its extent. Given the costs of underwriting such an analysis, we did not pursue the issue. This will be attempted at some later date.

We are left with simply speculating on the nature of the interaction if, indeed, it should prove to be significant. Our data analysis leads us to conclude that conservatism correlates positively with predictive accuracy while schooling is unrelated to it. Our survey of the predictions made by intellectuals (Chapter I) indicates that conservatives have been somewhat more accurate. On this basis, we would expect that the interaction of conservatism with schooling and their joint effect on predictive accuracy to be of great interest. Specifically, by reference to the existent research, we would hypothesize that well-schooled conservatives are the best predictors of social events.

I. Reconstructing the Model

Our data analysis of the nine public opinion data sets has served two purposes. Primarily, we have been able to test hypotheses which were generated by reference to previous research in the area of prediction. Secondly, unanticipated relationships have surfaced in the data analysis which compel us to alter our original conceptual model. By combining the information gained in both instances, we can now make several statements with reasonable certainty:

1. Schooling and predictive accuracy are unrelated,
2. Conservatism and predictive accuracy are

positively related,

3. Optimism and predictive accuracy are negatively related,

4. Schooling and optimism are positively related,

5. Age and optimism are positively related,

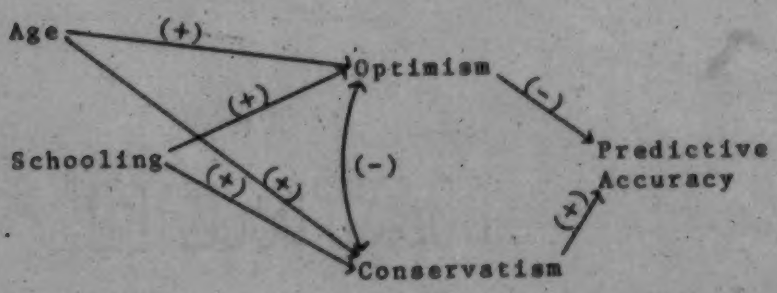
6. Conservatism and optimism are negatively related, and

7. Age and conservatism are positively related.

All these relationships, with the exception of the sixth, may be represented "causally," keeping in mind the limitations we have previously placed on the interpretations and use of the conceptual, causal model approach. Regarding the relationship between optimism and conservatism, we reiterate that, because of our inability to determine temporal priority, we must consider it as a covariate relationship. While all other relationships will be symbolized by a single-arrow, straight line, this specific relation will be denoted by a double-arrow, curved line. Thus, our new model takes the following form:

DIAGRAM 2

REVISED CONCEPTUAL MODEL



It is with reference to this model that we shall conduct a review of the social psychological and psychological literature in an attempt to interpret these research results.

FOOTNOTES

[1] While Kendall's Tau, as a non-parametric, rank-order correlation measure, would have been more appropriate for dichotomous data, Pearson's product-moment correlations were computed so that item variances and covariances would be available for the computation of Cronbach's alpha coefficient of reliability for each composite index. A comparison of these two correlation coefficients for a series of indicators demonstrated that the correlations were not disproportionately in disagreement with one another.

[2] In applying multiple regression techniques to ordinal or nominal data, Blalock (1964) suggests that there is reason to expect that the magnitude of the correlation and path coefficients will be reduced. This is due to the limitations on the range of possible variation in the ordinal or nominal variables included in the regression analysis.

[3] Given that all studies were based on non-probability, quota samples, the interpretation of statistical significance is open to question. Selvin (1970: 106) submits that "... statistical tests are unsatisfactory in non-experimental research for two fundamental reasons: It is almost impossible to design studies that meet the conditions for using the tests, and the situations in which the tests are employed make it difficult to draw correct inferences." The latter problem is due to the researcher's inability to satisfactorily control for all other confounding relationships which may affect the main relationship being tested. We propose to use significance tests simply as indicators of the relative strengths of relationships within the data. Our concern, then, is not with generalizing to populations on the basis of statistical significance or insignificance.

CHAPTER IV

IMPLICATIONS: THE INTELLECTUALS, FACTS AND VALUES

The preceding discussion has dealt with identifying possible correlates of predictive accuracy. The value of this endeavor rests on the degree to which these findings may be applied to other social issues of major concern. In this context, we assert that the research has implications for the assessment of certain roles which may be taken by intellectuals in society. This, however, is but one instance which might be more generally discussed in terms of the relationships between facts, beliefs, values, and knowledge.

It is our intent to discuss the role of the intellectual in society in an attempt to determine his impact upon the social realm which he cohabits with other members of society. In so doing, we may be able to document cases in which fact, value, and knowledge have been confused and misconstrued. From the discussion of concrete instances, we may then more easily examine the general fact-value controversy and draw some conclusions.

A. Who Are the Intellectuals?

Historically, learned men have occupied social positions which have been identifiable as distinct in class or status. In ancient Greece, the *philosophoi*, or "lovers of wisdom," were at once revered and despised for their views on man and society. Their reflections were of such import that we still read and discuss Plato and Socrates. In the Middle Ages that social group commonly referred to as "clerics" represented a visible sector of society dedicated to thought and the pursuit of knowledge. "Clerics" were easily recognized for they were, with few exceptions, monks and priests -- the only literate strata of medieval society. During the Renaissance, Montaigne, Galileo, Da Vinci and others, known collectively as "humanists," were considered to be the vanguard of original thought. Similarly, the "philosophers" of the eighteenth century assumed the role of purveyors of knowledge and stimulators of "progressive" thought. Personages such as Voltaire and Diderot are commonly mentioned when one considers the intellectuals of that century.

With the disappearance of the French rococo salons, the coffee houses of eighteenth century London and the aristocratic patronage of the learned, it has become extremely difficult to identify the intellectuals of our century as a distinct social category. Any discussion of intellectuals has been plagued with the obstacle of defining who they are. Indeed, such definitions of the intellectual as may exist seem to lack specificity and thus seem to obscure the real subject of debate. This stumbling block further prevents operationalizations in social research which would aid the social scientist in describing the intellectual collectivity. Such problems have led Kadushin et al. (1971: 2) to suggest that "... a reasonable working definition of an intellectual is that an intellectual is a person whom other intellectuals believe to be an intellectual."

Other authors have put forth varied definitions on intellectuals which, while being less circular, may be no less vague. Cunliffe (1955) considers the intellectual to be a man of unusual intelligence who generalizes about the world. Barzun (1955) uses the label to apply to any man who carries a briefcase. Merton (1964: 209) suggests that intellectuals are those individuals who "... devote themselves to cultivating and formulating knowledge."

Perhaps the most useful definition of the intellectual has been proposed by Furst (Nettler, 1968: 201 fn.), who simply describes the intellectual as a "professionally thoughtful" man. This prompts us to distinguish between the man of knowledge and other kinds of thinkers. Furst's definition may be further elaborated by Fyvel's (1968: 16) characterization of the intellectual as "... person who is fascinated by general ideas and wants them to be as interesting and influential as possible." While intellectuals and other thinkers (variously labelled as the intelligentsia, experts and scholars) reflect on the social world, the former are more frequently "generalists"; that is, they concern themselves with a multiplicity of concerns. Schumpeter (1942) suggests that they lack first-hand information or knowledge of these events. To this extent, their reflections may lead them to comment on issues about which they have little expertise. The intelligentsia or scholars appear to be more restricted in their areas of concern. They limit their discourse and comment to subjects which are familiar to them and in which they are knowledgeable.

Above all else, it appears that the intellectual may be generally described as a highly schooled social commentator. While Parsons (1969), Knopfelmacher (1968), and Coser (1965) would assert that the man of ideas is well-educated, this descriptive term is vague. Although "well-educated" is to be understood in a qualitative sense, our more common conception of education is a quantitative one. Thus, as we shall argue later, it seems likely that we hear "well-educated" but we think "highly schooled."

In addition to this characteristic attributed to the intellectual, Knopfelmacher (1968) describes him as concerned in some way with broad social and/or political questions. Further, the intellectual is effective in his writing or oratory in expressing his moral or political concern. As a social commentator, the intellectual reflects upon the social world, describes it and often, but not always, presents proposals for social change. In this sense, he may appear as social critic, policy advisor, moralist, or political opportunist. This description of the man of knowledge therefore rejects the conception of the intellectual as totally detached from society. Rather, we assert that he may perform as a dealer in culture, promoting and hawking the wares of artists and creative writers. More important for this discussion, he may appear as a societal Cassandra who continually warns of the impending decline of society or he may be a political catalyst who promotes his preferred "ism" as the social panacea. To be sure, in functioning in any of these roles, the intellectual is socially attached to the extent that he reveals his thoughts to an audience.

As a social commentator, the intellectual most frequently is involved in criticism or advocacy. Coser (1965: viii) suggests that "... in the tasks they perform, modern intellectuals are descendents of the priestly upholders of sacred tradition, but they are also and at the same time descendents of the biblical prophets, of those inspire madmen who preached in the wilderness far removed from the institutionalized pieties of court and synagogue, castigating the men of power from the wickedness of their ways. Intellectuals are men who never seem satisfied with things as they are, with appeals to custom and usage."

As a critic, the intellectual attempts to inform the masses on matters of public interest. In so doing, there is little assurance that his reports are accurate; that he may err, accidentally or purposely, is always a possibility. "Sceptical, introspective, opportunistic, insecure, ambivalent -- these are some of the terms, flattering or unflattering, which periodically recur in the literature to describe either intellectuals or journalists, and suggest a social type without well-established roots or traditional loyalties, a type which is capable of disregarding conventional mores and profaning nationalist or religious sentiment" (McCormack, 1966: 35). Under these circumstances, the intellectual may be characterized as a man who attempts to place micro-social problems and concerns into their proper macroscopic, historical and social framework. The object of the critical intellectual's endeavors is the construction of pragmatic models of man, society, and government which claim to cope with social change.

If the intellectual desires that his criticism be considered, he must inevitably seek to influence his audience. As a critic of the existing social scene or of proposed policy, the man of knowledge thus serves as a political or social advocate who attempts to mobilize public opinion in his favor.

In a more positive sense, the intellectual may assume the role of advocate as a spokesman for ideas, doctrines, or political policies. In this sense, he directly concerns himself with public policy; he assumes a role which entails a commitment to a particular perspective and a view that all other competing ideas are incorrect. Again, his aim is either to influence public opinion or to advise those in power by proposing allegedly constructive approaches to social issues of concern. Literature on these individuals abounds with instances of such involvement.

Coser (1965: 99) points out that, historically, "... political sects have played a major role in the life of many intellectuals since the early nineteenth century. They have been important habitats for ideologies. In such sects, otherwise isolated and alienated intellectuals have found ... sustaining fellowship of like-minded men, the fraternity for which they yearn, a fraternity denied to them in the society at large." Thus, we may recall the Saint-Simonians, the Jacobins, and the Bolsheviks, all of whom were constituted of intellectuals advocating some nature of socio-political reform.

The social milieu of the twentieth century in North America presents much the same impression. Riesman and Glazer (1955) describe the role played by intellectuals in supporting the acceptance of the New Deal economic policy by the public. In Canada, the establishment of the Committee for an Independent Canada, a political pressure group pledged to the development of an independent, capitalist Canada, is supported by intellectuals such as Walter Gordon and Abraham Rotstein while its socialist counterpart, the Waffle, is led by Melville Watkins and James Laxer. As Shils (1972: 9) observes, "... liberal and constitutional politics in great modern states and liberal and 'progressive' nationalist movements in subject territories have to a large extent been 'intellectuals politics'."

The list of intellectuals serving as advocates is lengthy. Bruckberger (1956) and Hansen (1969), to mention two, concur with this view that intellectuals often attempt to mold public opinion for the purpose of deriving some degree of influence over the course of worldly events. As Molnar (1973: 8) asserts, "... it is clear that he [the intellectual] puts his mental ability, education, articulateness, and experience to some political or social use, that he is not satisfied, ultimately, with interpreting the events -- of economic, social, political nature -- around himself, but in trying to influence and transform them. He thus combines theory and praxis, and is likely to formulate an ideology or adhere to one."

Social advocacy on the part of intellectuals has taken other forms as well. Knopfelmacher (1968: 35) believes these intellectuals to be the most visible in society: "By far the most common type of intellectual dissenter in capitalist countries is not the revolutionary intellectual but a non-revolutionary, vaguely oppositional, 'alienated' person." He serves a type of supervisory role for society by "looking over the shoulders" of the decision-makers. Coser (1970: 142) believes that "... many intellectuals did not need disillusionment to convince them of the long-range incompatibility of power and intellect. They saw in themselves ab initio as the bearers of the consciousness and conscience of the society, in permanent readiness, if need be, to descend into the political arena to do battle against those who held power." As critics, intellectuals hold a position of power in society for they have in their grasp the potential to assist in organizing dissidents against the decision-makers in power.

Men of knowledge have been no less involved in policy advisory capacities. "Many intellectuals ... make the claim that they are entitled, by virtue of their status, to 'advise and consent' in matters of state in a very special 'moral' sort of way, of which others are not capable" (Knopfelmacher, 1968: v). Indeed, the birth of the United States as an independent nation was engineered with direct assistance from intellectuals such as Jefferson, Adams, and Franklin. Historians inform us that the trend in selecting "men of letters" as policy advisors continued in the United States until the Jacksonian era wherein the atmosphere was transformed by the heroics of frontiersmen such that an aura of anti-intellectualism developed. For some years afterward, this exclusion of intellectuals continued. Only since the early 1900's have intellectuals regained a voice in advising on government policy. Since that time, they have intermittently served presidents such as Wilson, F.D. Roosevelt, and Kennedy. Moynihan (1970), for example, has described the involvement of intellectuals in the war on poverty. Similarly, Hansen (1969) notes the influence of intellectuals in sending American troops into Viet Nam.

In a more general sense, Coser (1970) discusses the relationship between intellectuals and those in power. He makes a critical distinction between the rare cases in which intellectuals have assumed power and the more frequent instances where they have performed as aides to decision-makers. In the latter capacity, they have served two functions. "When the times seem inconspicuous for revolutionary upheavals and intellectuals yet feel that it is imperative to bring about major changes in the operation of society, they may turn from attempts to gain power for themselves to the task of converting and advising the men of power" (Coser, 1970: 138). Their second function relates to the legitimization of power. In essence, intellectuals may serve to fashion ex post facto explanations and a rationale for the exercise of power.

The assertion that intellectuals serve in political advisory positions is further substantiated by a number of scholars. Merton (1964) has suggested that some intellectuals operate within government bureaucracies to assist decision-makers in setting policy. Similarly, Shils (1972) has devoted a considerable proportion of his book, The Intellectuals and the Powers, to a review of the impact wielded by intellectuals upon those in public office.

Thus, it seems incontestable that intellectuals are involved to some appreciable degree in the workings of government and in the shaping of public opinion. Such advocacy and advice, as we shall argue, implies that intellectuals undertake some nature of social prediction.

B. Predictions Implicit in Advice and Advocacy

When men propose programs designed to facilitate certain social changes, they do so on the basis of prophecies made about the future state of social affairs. That is, policy is meant to be applied in the present (or very near future) to effect change further in the future. This usually entails some nature of prediction as to what the future will be, how the policy will change that forecasted situation, and what the ramifications of such change may be. Thus, if the predictions upon which policy is based are incorrect, the proposed policy itself will, by definition, prove to be ineffective. This is not to imply a necessary, causal relation between "good" prediction and "good" policy. Rather, a more accurate statement is that good prediction may increase the probability that effective policy may be developed. Conversely, if policies are implemented on the strength of poor predictive bases, they will fail in their objectives.

An example may shed more light on this issue. Cantril (1967) describes the 1961 Institute for International Social Research study of Cuba aimed at ascertaining the proportion of the population supporting the Castro regime. The institute found that from seventy-one to ninety-three percent of the Cuban population favored the Castro government. A few months later, the Kennedy administration decided to support an armed invasion of the island by Cuban exiles. The expectation was that a popular, anti-Castro movement would develop given the stimulus of an invasion abetted by the United States. The policy was a fiasco. The Kennedy administration's inaccurate prediction led to the establishment of policy which was ultimately dysfunctional.

A word of caution may be necessary at this point. Obviously, policy decisions are seldom based on the perceived relationship between only two events. It is more often the case that policy-makers are faced with attempting to map cause-effect relationships among several variables. The issue at hand, however, is that to err in predicting one effect may lead to reverberations throughout the model under consideration. Returning to our example, the failure of the Bay of Pigs invasion may have affected the United States' international relations as well as domestic political and economic affairs.

A similar condition exists when men attempt to influence the opinions of the masses. Intellectuals often entreat the public to accept particular ideologies as a means of producing "a better world." Marcuse (1970: 64) encourages public acceptance of socialist principles as the solution to major social concerns: "The abolition of poverty and misery is possible ... as are the abolition of alienated labor and the abolition of what I have called 'surplus repression'." Implicit in this statement of advocacy is the prophecy that socialism will provide the means for improving the world. Likewise, Beichman (1970) notes that intellectuals serving as advocates have encouraged the public to re-evaluate their conceptions of labor unionism. Persons as politically diverse as William F. Buckley, Irving Kristol, and John Kenneth Galbraith have spoken in opposition to labor movements. Galbraith, for one, predicts the demise of unions as political vehicles serving the working sector of society. On this basis, he attempts to convince the public of the futility of supporting such organizations. Revel (1970), in forecasting revolution in the United States, urges his French compatriots to reassess the impact of dissent in their own country.

Inevitably, policy-makers and the public are faced with a dilemma. The dilemma consists of choosing between competing ideas and policies presented to them. We have suggested that such choice could be based on the potential accuracy of the predictions implicit in these ideas and policies. At this point, our empirical findings may prove to be of some assistance.

C. Selecting Among Advocates on the Basis of Knowledge

If men are really concerned with choosing between advocacies on the basis of their predictive efficacy, rather than simply identifying with the values and ideologies implicitly or explicitly contained in such advice, they require some criteria on which they may base such choice. Having asserted that predictive accuracy may be one mark of "good" advice, it follows that our attention might profitably be turned to an examination of the potential accuracy of the predictions of different types of advisors. In this sense, choosing the "best" advice comes to be dependent upon determining which advocates are likely to be the best predictors of future social events. Thus, a discussion of the utility of various criteria as correlates of predictive accuracy is essential. Here, our research results may be brought to bear.

One criterion which is frequently thought to be important in differentiating good predictors from bad is knowledge. Yet "knowledge" itself is a vague term.

Ayer (1956: 13) has attempted to define knowing in contradistinction to believing: "To say that I know that something is the case, though it does imply that I am sure of it, is not so much to report my state of mind as to vouch for the truth of whatever it may be. In saying that I know it I engage myself to answer for its truth and I let it be understood that I am in a position to give this understanding. If my credentials do not meet the usual standards, you have the right to reproach me. You have no right to reproach me if I merely say that I believe, though you may think the less of me if my believe appears to you irrational. If I tell you that I believe something that I do not, I am misinforming you only about my mental attitude; but if I tell you that I know something which I do not, the chances are that I am misinforming you about the truth of the statement which I claim to know, or if not about its truth, then about my authority for making it."

Nettler (1972: 3) goes further into the issue by pointing to various, identifiable kinds of knowing. "Having information," he says involves the ability to state a fact. "To have knowledge is to be able to state a non-tautological empirical rule..." "To be acquainted with betokens familiarity" while "to know how is a phrase applied to any event or concert of events deemed likely to occur for a person or thing in a delineated circumstance."

The public usage of the term, knowledge, is not specific; it may refer to any of the kinds of knowing which Nettler has described. An important distinction between having information and having knowledge is further clarified by Nettler's (1972: 5) statement that "... one hesitates to call facts 'knowledge' unless knowing them increases the accuracy of contingent forecast." If men confuse the various forms of knowing and use these meanings indiscriminately, then the relationship between knowledge and the ability to predict accurately will be indeterminate. We suggest that this indeed may be the case. It is unlikely that men consistently attempt such discriminations. Beichman (1972), for instance, has assailed those critics of American society who have "factually" stated that radical terrorism is a moral force. Obviously, someone's facts are in error, yet support is evident for each side of the argument. And if the facts are debatable, the public will have difficulty in determining who has more knowledge.

It may be, however, that the public makes no attempt to assess formally how much knowledge is possessed by advocates of various social policies and perspectives. Rather, a common sense conception of the knowledgeable man appears to equate him with the educated man. Such are the findings of Beardslee and O'Dowd (1962), Mead and Metraux (1962), and Wood (1968). We have argued earlier (Cf. Chapter I), however, that education is usually conceptualized quantitatively rather than qualitatively. If this is so, then the public has no readily accessible means for determining which advocates have more knowledge.

Therefore, we would argue that "amount of knowledge," as it is commonly identified, is a poor criterion for choosing between competing policies or perspectives which may be promoted by various intellectuals. All intellectuals share at least one characteristic: they are allegedly well-educated. In a majority of cases this means, more accurately, that they are long-schooled. Our data analysis has led us to conclude that schooling is not correlated with predictive accuracy of social events. Thus, even if intellectuals could be distinguished from one another on this basis, it is doubtful that this would help to isolate accurate predictors. This obstacle then creates further difficulties in choosing among competing advisors.

D. Selecting Among Advocates on the Basis of Belief

Our data analysis suggests that one's broad, political orientation and attitude toward the future may have some relation to the accuracy of one's predictive record. If this is true, then knowledge of such characteristics might be fruitful in assisting us in selecting whose advice we should accept.

Our research has led us to conclude that conservatives and pessimists may be better predictors of social events than liberals and optimists. Further, we noted that pessimism and conservatism are themselves correlated.

Aron (1957: xv) has observed that "... both American liberals and the Left in France and Britain share the same illusion: the illusion of the orientation of history as a constant direction, of evolution towards a state of affairs in harmony with an ideal." The ideal to which Aron refers is Progress. In addition to this political orientation, he also asserts that such movements are stricken with a "visionary optimism" which distorts their conception of the future. The major result is to err in predicting the role of the proletariat in social change. Elsewhere, Aron (1957: 305-306) diagnoses the main ailment of the Left: "The optimism of the Left was created and maintained by a strong feeling: admiration for the power of reason, certainty that the application of science to industry would revolutionize the order of human society and the condition of its individual members." Similarly, Knopfelmacher (1968), Molnar (1973), and Riesman and Glazer (1955) assert that the optimistic orientation inherent in radical-left and liberal political prespectives hinders the predictive accuracy of their adherents. Furthermore, this hindrance can only detract from the efficacy of policies and positions advocated by intellectuals on the Left.

The record of conservative and pessimistic intellectuals can be shown to be somewhat better. Epstein (1973), in examining the accomplishments of the intellectuals of the Right, states that: "Viewed thus far in its brief history, the new conservatives strongly resemble another abrupt shift in political orientation among American intellectuals -- namely, that undertaken by the group of intellectuals who came to be known as the Cold Warriors. Observe some parallels. Both the Cold Warriors and the new conservatives initially pitted themselves against very real enemies -- for the former, Stalinism at home and abroad; for the latter, the anti-democratic New Left. Both the Cold Warriors and the new conservatives took up positions that in some respects were not only correct but required courage to hold, in that they went against the grain of the majority of their intellectual peers. Both groups were essentially victorious; and both contributed significantly to the defeat of their avowed enemies by disqualifying them intellectually."

Fyvel (1968), in reviewing the periods of transition in British intellectualism with regard to their relation to power and decision-making, implies that those men of knowledge who chose a more temperate political position were ultimately borne out to have been more correct in their assessment of the future of their country. Rees (1965) notes that Winston Churchill, in taking a conservative stand regarding the preparation by Britain for the possibility of a war with Germany, advocated a build-up in armament stockpiles and was opposed by liberals throughout

Britain. The unfolding of events in 1939 and 1940 suggests that, had his advice been followed, World War II might have posed fewer threats to British sovereignty than was the case.

We suggest, then, that a consideration of the beliefs espoused by advocates or advisors may serve as a workable criterion for selecting which policy might be followed. That is, there is warrant for determining what kind of political stance and future orientation underwrites an advice.

E. Facts, Values, Beliefs, and Knowledge

Our empirical study of predictive accuracy of social events and our discussion of intellectuals as policy advisors and advocates, and hence as predictors, compels us to comment upon facts, values, and beliefs as they relate to knowledge. Gouldner (1962: 200) has asked the rhetorical question "... if technical competence provides no warrant for making value judgments, then what does?" Becker (1967) would ask his fellow sociologists "whose side are we on?" We ask whether the confusion of belief and value with fact can provide knowledge.

Earlier, we attempted to describe the relationship between facts and knowledge by reference to Ayer (1956) and Nettler (1972). We may define values as preferences. As such, facts may be valued as may desired end-states. Nettler (1973: 4) asserts that "... it is values as desires, rather than values as facts, that are seen as the possible enemies of knowledge." It is this distinction which is of central importance. The correspondence between facts and desired ends is not always one-to-one. In another sense, one does not always get what one wants.

A belief may be described as demonstrable confidence or trust that something is true. We add the qualification "demonstrable," because people do not always believe what they say, and we are more confident of our beliefs, and those of others, as we act in accord with our verbalizations.

It would seem that men believe what they value and place value in their beliefs. The relationship is therefore characteristically symmetrical; if such is not the case, then Ayer (1955) tells us that we are being misinformed by the individual experiencing this dissonant relationship. If we confine ourselves to instances in which the symmetrical relation is the case, the relationship between fact, value and belief is easily understood. Where facts are at odds with values as desired ends, it would appear quite probable that men will often choose to believe in their values at the expense of the facts. This being the case, our empirical observation that certain value orientations appear to predispose men to make inaccurate social predictions is not surprising.

We have noted that some individuals exhibit an optimistic orientation towards the future of society and a liberal political preference. In the case of intellectuals, this is manifest in their rigid adherence to the notion of progress such that they believe that society moves ever onward and upward. At odds with these social commentators are the men of knowledge who see no signs in the history of their societies which would lead them to predict that much will improve. Our data have suggested that men of a pessimistic and conservative disposition may be more successful in predicting future social events.

In this context, the relationship between belief and knowledge becomes somewhat clearer. Mellor (1967: 345) describes the connection: "... the formation of a belief is itself an action, though not overt, and the same notions of 'recommendability' apply to it as to any other. To believe what is probable is to believe what can be recommended to believe in the light of what one knows, and to believe what is improbable is to lapse. Thus to act out the consequences of an improbable belief, though it may win a certain ironic admiration for one's consistency or tenacity, is only to persist in doing what is not to be recommended in the light of the known facts..." Optimists and liberals are therefore acting contrary to facts when they predict inaccurately. This contrary act may be due to the lack of correspondence between their value-belief systems and the facts relevant to the predicted event.

The confusion of value with fact, therefore, exerts a debilitating influence on knowledge and our use of it. If men seek to make better use of facts and knowledge, they must be willing to alter their beliefs according to the facts which are presented. The subordination of belief to knowledge is essential, for as Mellor (1967: 345) states: "Our standards of what is recommendable and of what is reasonable are relative to what we know, and not in the same way relative to what we believe; which is scarcely surprising, for, roughly, what determines those standards is not a theoretical ideal of consistency but a desire to get on in the world. It is for this reason that the concept of knowledge illuminates that of belief, as the concept of belief does not, in this connection, illuminate that of knowledge. We did not start from a concept of belief, and invent the idea of knowledge when we found to our delight that some of our beliefs were actually true."

If human beings desire to be able to accommodate themselves rationally to social change, accurate prediction is an invaluable asset. To accomplish this goal, it is necessary to distinguish fact from value and predicting from hoping. If "responsible" politicians or officials continue to be influenced by advisors and advocates who cannot, or will not, make this distinction, then the efficacy of social programs and policies will be limited. In the words of Charles Frankel (1969: 54): "Too many people and too many destinies depend on [the official] to excuse his wasting his efforts or the world's hopes on empty causes. Don Quixote is tolerable, and even admirable, but this is because he had only one follower, Sancho Panza, who had to take the lumps."

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APPENDIX I

SELECTED INDICATORS OF OPTIMISM, CONSERVATISM AND PREDICTIVE ACCURACY

For the nine selected data sets, items which were chosen as possible indicators are listed. In the case of optimism items, the response which we conceived as the optimistic choice is noted in parentheses. For conservatism indicators, the responses for each item are ranked, in the parentheses, from least conservative to most conservative. For indicators of predictive accuracy, the correct prediction is placed in parentheses; all other responses were taken to be incorrect. In instances where predictions referred to election outcomes or economic developments, correct responses were determined by abstracting the relevant data from the Canada Yearbooks or from the Encyclopedia Britannica Yearbooks for specific years. For predictions on relative world power positions, reference to the Encyclopedia Britannica Yearbook on armed forces strengths of various countries provided the necessary information. As well, this source provided reviews of editorials from various periodicals which addressed themselves to this very question. For the remainder of the predictive accuracy questions, the correct outcome was readily observable. Indicators used for constructing composite indices are designated as such by an asterisk.

CIPO 279

Optimism:

1. Will 1960 be a year of industrial strikes or industrial peace? (Peace)

2. Will 1960 be a year when taxes go up or down? (Down)

* 3. Do you think that, for people like yourself, the world in ten years will be a better place to live in than it is now? (Better place)

4. By 1980, do you think that the expectancy of life will have risen to 100 years? (Yes)

5. By 1980, do you think a cure for cancer will have been found? (Yes)

* 6. By 1980, do you think that Russia and the West will be living peaceably together? (Yes)

7. By 1980, do you think our standard of living will have doubled? (Yes)

8. By 1980, do you think we will be working a three-day week? (Yes)

* 9. By 1980, do you think that there will be an atomic war between Russia and America? (No)

*10. By 1980, do you think that civilization, as we know it, will be in ruins? (No)

*11. By 1980, do you think that all countries will have ceased to manufacture H-bombs or anything like them? (Yes)

*12. Do you believe that it is possible or impossible to reach a peaceful settlement of differences with Russia? (Possible)

*13. Do you think that 1960 will be a peaceful year, more or less free of serious international disputes, or a troubled year with much international discord? (Peaceful year)

Conservatism:

14. By 1980, do you think Russian Communism will have collapsed? (No) (Yes)

15. By 1980, do you think that capitalism and the Western way of life will have collapsed? (Yes) (No)

*16. If a Federal election were held today, which party's candidate do you think you would favor? (C.C.F.) (Liberal) (Progressive Conservative) (Social Credit)

*17. If you voted in the last election, which party did the candidate for whom you voted represent? (C.C.F.) (Liberal) (Progressive Conservative) (Social Credit)

Predictive Accuracy:

*18. Do you think that 1960 will be a year when America will increase her power in the world, or a year when American power will decline? (Decline)

*19. By 1980, do you think that man will have landed a man on the moon? (Yes)

*20. By 1980, do you think that you will be able to travel anywhere in the world without a passport? (No)

*21. Do you think that 1960 will be a year of rising prices or a year of falling prices? (Rising prices)

*22. Do you think that 1960 will be a year of full employment or a year of rising unemployment? (Rising unemployment)

*23. Do you think that 1960 will be a year when Russia will increase her power in the world, or a year when Russia's power will decline? (Increase)

*24. Do you think that 1960 will be a year when Britain increases her power in the world, or a year when Britain's power declines? (Decline)

CIPO 282

Optimism:

* 1. Do you think there is, or is not, much chance that the Nazis will again become powerful in Germany? (Not much chance)

Conservatism:

* 2. If a Federal election were held today, which party's candidate do you think you would favor? (C.C.F.) (Liberal) (Progressive Conservative) (Social Credit)

* 3. If you voted in the last election, which party did the candidate for whom you voted represent? (C.C.F.) (Liberal) (Progressive Conservative) (Social Credit)

Predictive Accuracy:

* 4. How long do you think it will be before there is another world war -- or do you think it's likely that we will have another world war? (World war unlikely)

* 5. Thinking about the Conservative Party, what do you think might happen to it in the next (Federal) election -- will it gain seats, lose seats, or remain about the same? (Lose seats)

* 6. And what about the Liberal Party? Do you think that in the next election it will gain seats, lose seats, or stay about the same? (Gain seats)

* 7. And the C.C.F. Party? Do you think it will gain or lose seats in the next election or remain about the same? (Gain seats)

* 8. As you may know there are, at present, no Social Credit members in the House of Commons. In your opinion what is the future of this party, Federally? Do you think it will regain a place as a Federal party in the next election, or not? (Will regain place)

CIPO 317

Optimism:

* 1. Some people say the differences between various parts of Canada are now so great they will never be solved, and that Confederation will break up. Do you agree or

not? (Disagree)

Conservatism:

2. Do you think Communist China should or should not be admitted as a member of the United Nations? (Should) (Should not)

* 3. If a Federal election were held today, which party's candidate do you think you would favor? (N.D.P.) (Liberal) (Progressive Conservative) (Social Credit and Creditiste)

* 4. If you voted in the last Federal election, which party did the candidate for whom you voted represent? (N.D.P.) (Liberal) (Progressive Conservative) (Social Credit)

Predictive Accuracy:

* 5. In the last Federal election, the Conservatives received about as many votes as the Liberals. Do you think these two Parties will continue at about the same level, say for the next four or five years -- or do you think that one party will pull considerably ahead of the other? (One party will pull ahead)

* 6. Which Party do you think will pull ahead considerably? (Liberals)

* 7. In the last election the N.D.P. showed an increase in the number of votes it obtained. In your opinion do you think the N.D.P. will continue to gain votes, say during the next five years, or lose votes? (Will lose

votes)

* 8. At the same time, the Social Credit Party lost votes in the election. In your opinion will the Soc-Cred (Creditiste) Party continue to lose votes or will it gain voting strength, say in the next five years? (Will gain votes)

NORC 330

Optimism:

Here is a sort of simple scale. On this scale, zero stands for a situation in which there are no world tensions at all, and ten represents extreme tensions in the world.

a. What number would you say best represents the amount of world tensions just about now?

b. Which number on the scale best represents the world tensions that you personally expect by about 1965 -- that is, just about two years from now?

c. How about five years from now -- which number stands best for the level of tensions in the world which you think might exist then?

* 1. If score on "a" is less than score on "b," this indicates a pessimistic response. If score on "a" is greater than score on "b" this represents an optimistic response.

* 2. If score on "a" is less than score on "c" this

represents a pessimistic response. If score on "a" is greater than score on "c" this indicates an optimistic response.

3. Here are several statements about the effects of a nuclear (or atomic) war. Which of these statements comes closest to representing your view, if such a war were to happen?
    a. Enough people would survive a nuclear war to pick up the pieces and carry on with a good chance of rebuilding a system which lives under American values, as we know them. (Optimistic)
    b. A nuclear war would mean the end of civilization as we know it. (Pessimistic)
    c. Although nuclear war would be a terrible thing, we would survive as a nation. (Pessimistic)
    d. If nuclear war does come, people in the U.S. will make the best of the situation. (Optimistic)
    e. A nuclear war would mean the end of the world and all life in it. (Pessimistic)

Conservatism:

* 4. What political party do you generally support? (Democratic) (Republican)

Predictive Accuracy:

Here is a card. Printed on it are various possible ways in which the Cold War might end. Will you please look at this list and tell me which you personally think is the most likely way for the Cold War to come to an end?

a. The Cold War will continue indefinitely; no end is in sight at all.

b. The whole world will become Communistic by people accepting Communism.

c. By revolutions, civil wars and small wars, the Communists will come to power in the whole world.

d. The Communist powers will be victorious in a world war.

e. World War III will take place, resulting in such destruction that it makes no sense to speak of "winners" or "losers."

f. The United States and its allies will win in a world war.

g. The Communists are going to lose due to revolutions, civil wars and small wars in Communist nations.

h. The Communists will accept the Western way of life, and the Communist powers will become like the United States, Great Britain or Sweden.

i. The Cold War will end through disarmament or reconciliation.

j. A Third Force will emerge in the world able to control the actions of the Communist nations as well as those of the United States.

k. The United States will have to surrender without war because of the development of such new weapons by Communist nations that the U.S. could not possibly win.

1. The Communist nations will have to surrender without war because of the development of such new weapons by the United States that the Communists could not possibly win.

* 5. If response alternatives "a" or "i" were chosen, they were taken to be accurate. All other responses were taken to be inaccurate.

Now here are some cards. On these cards are printed various possible future situations which may exist in our civil defense. Zero stands for something that is impossible or nearly impossible. Ten stands for something you consider to be certain or just about certain to happen.

* 6. All available spaces which provide good protection against fallout will be marked as shelters and stocked with everything necessary for survival. (Unlikely)

* 7. There will be fallout shelters available for all Americans. Existing spaces will be used, other spaces will be altered to provide protection, and as needed, new fallout shelters will be built. (Unlikely)

* 8. In tense situations which might precede a war, communities near military bases -- plus some large cities will evacuate their people to safer areas where fallout shelters will be available. (Unlikely)

* 9. There will be fallout shelters throughout the nation, and also shelters against nuclear blast, heat, and

chemical and biological agents in large cities. (Unlikely)

*10. In addition to shelters and existing defense against bombers, there will be defense against ballistic missiles around our large cities and military installations. (Likely)

*11. There will be no shelters against nuclear weapons because arms control and disarmament steps will make nuclear war impossible. (Likely)

*12. The way it looks to you today, when, would you say, is the Cold War going to end? (5 to 10 years) or (10 to 20 years)

*13. How likely is it that there will be a major war involving nuclear weapons in the next five years or so? (Unlikely)

*14. How likely is it that there will be disarmament with adequate controls in the next five years? (Unlikely)

RCOMO 524

Optimism:

* 1. Do you expect 1972 to be a better year for you than 1971, about the same, or not as good as 1971? (Better)

Conservatism:

* 2. At the present time, would you describe yourself as a strong Nixon supporter, a moderate Nixon supporter, a

moderate critic of Nixon, or a strong critic of Nixon? (Strong critic) (Moderate critic) (Moderate supporter) (Strong supporter)

I'm going to read you some things President Nixon has done or been identified with. Regardless of your over-all opinion about Nixon, for each one would you tell me if you approve of President Nixon's position, don't approve of it, or have no real opinion? First do you generally approve or disapprove of:

* 3. His views and nominations with respect to the Supreme Court? (Disapprove) (Approve)

* 4. His handling of the economy (inflation, employment, etc.) before the wage price freeze? (Disapprove) (Approve)

5. His freezing of wages and prices in this country? (Approve) (Disapprove)

* 6. His surcharge on foreign imports and his efforts to stabilize the dollar abroad? (Disapprove) (Approve)

* 7. His handling of the Viet Nam war? (Disapprove) (Approve)

8. His decision to visit Communist China? (Approve) (Disapprove)

9. His decision to visit the Soviet Union? (Approve) (Disapprove)

10. His decision to support Communist China's entry into the United Nations? (Approve) (Disapprove)

*11. His attitude and actions with respect to youth? (Disapprove) (Approve)

*12. His degree of frankness and openness in dealing with the American people? (Disapprove) (Approve)

*13. There has been a lot of talk about the direction the Supreme Court is taking. Would you like to see the Supreme Court move in a more liberal direction, or a more conservative direction, or stay about the same as it is now? (More liberal) (Stay as it is) (More conservative)

14. We've been talking about things on the domestic front. Let's turn now to foreign affairs. The United States Government now favors the admission of Communist China to the United Nations, but Communist China says it will not come in as long as Nationalist China remains a member. If it comes down to a choice, how would you feel -- that Communist China should be admitted even if it means expelling Nationalist China, or that Nationalist China should not be expelled even if it means Communist China won't come in? (Communist China admitted -- Nationalist China expelled) (Nationalist China not expelled -- Communist China left out)

*15. On the subject of Viet Nam, are American troops being withdrawn at too slow a rate, too fast a rate, or at about the right rate? (Too slow) (About right) (Too fast)

Predictive Accuracy:

*16. Would you say prices are going up as sharply as they were, or at a slower rate? (Going up as sharply)

*17. There has been speculation as to whether President Nixon will have Spiro Agnew as his running mate for Vice President in the next election. Do you think President Nixon will have Agnew as his running mate or not? (Yes)

AIPO 621

Optimism:

* 1. So far as you are concerned, do you think that 1960 will be better or worse than 1959? (Better)

* 2. Do you think that 1960 will be a peaceful year, more or less free of serious international dispute, or a troubled year with much international discord? (Peaceful year)

* 3. Do you think that 1960 will be a year of strikes, industrial disputes, or a year of industrial peace? (Industrial peace)

4. Do you think that 1960 will be a year when taxes will rise, or a year when taxes will fall? (Taxes fall)

* 5. Do you think that for people like yourself, the world in ten years time will be a better place to live in than it is now, not so good, or just about the same? (Better place)

Looking ahead to 1980, that is, 20 years time, which of these do you think will have happened by then:

6. Expectation of life will have risen to 100 years? (Yes)

7. A cure for cancer will have been found? (Yes)

* 8. Civilization, as we know it, will be in ruins? (No)

Conservatism:

* 9. In politics as of today, do you consider yourself a Republican, Democrat or Independent? (Democrat) (Republican)

*10. If the elections for Congress were being held today, which party would you like to see win in this state -- the Democratic Party or the Republican Party? (Democratic) (Republican)

Looking ahead to 1980, that is, 20 years time, which of these do you think will have occurred:

11. Russian Communism will have collapsed? (No) (Yes)

12. Capitalism and the Western way of life will have collapsed? (Yes) (No)

Predictive Accuracy:

Which of these do you think is more likely to be true of 1960:

*13. A year of rising prices, or a year of falling prices? (Rising prices)

*14. A year of full employment, or a year of rising unemployment? (Rising unemployment)

*15. A year when Russia will increase her power in the world, or a year when Russia's power will decline? (Increase power)

*16. A year when America will increase her power or a year when American power will decline? (Decline)

Looking ahead to 1980, that is, 20 years time, which of these do you think will have happened by then:

*17. Man will have landed on the moon? (Yes)

*18. Russia and the West will be living peacefully together? (Yes)

*19. You will be able to travel anywhere in the world without a passport? (No)

*20. Our standard of living will have doubled? (No)

*21. We will be working a three-day week? (No)

*22. Atomic war between Russia and America? (No)

AIPO 721

Optimism:

* 1. So far as you are concerned, do you think that 1966 will be better or worse than 1965? (Better)

* 2. Do you think that 1966 will be a peaceful year, more or less free of international disputes or a troubled year with much international discord? (Peaceful year)

* 3. A year of economic prosperity -- or a year of economic difficulty? (Prosperity)

* 4. A year when taxes will rise -- or a year when taxes will

fall? (Fall)

Conservatism:

5. Do you approve or disapprove of the way Johnson is handling his job as President? (Disapprove) (Approve)

6. Do you think Communist China should or should not be admitted as a member of the United Nations? (Should be) (Should not)

* 7. Which of these three policies would you like President Johnson to follow? (Go more to the left, by following more of the views of labor and other liberal groups) (Follow a policy halfway between the two) (Go more to the right, by following the views of business and conservative groups)

* 8. In politics, as of today, do you consider yourself a Republican, Democrat, or Independent? (Democrat) (Republican)

* 9. Some people have said we should go all out in bombing North Viet Nam until the Communists are ready to negotiate. Others say we should stop bombing North Viet Nam right now and call upon the Communists to negotiate. What is your opinion, should we go all out or stop bombing in North Viet Nam? (Stop bombing) (Go all out)

*10. In the election in November, 1964 -- when Johnson ran against Goldwater -- for whom did you happen to vote? (Johnson) (Goldwater)

*11. If the elections for Congress were being held today, which party would you like to see win in this congressional district -- the Democratic Party or the Republican Party? (Democratic party) (Republican party)

Predictive Accuracy:

*12. Which of these do you think will be true of 1966 -- a year of rising prices -- or a year of falling prices? (Rising prices)

*13. A year when Russia will increase her power in the world -- or a year when Russian power will decline? (Increase power)

*14. A year when America will increase her power in the world -- or a year when American power will decline? (Increase power)

*15. A year of full employment or a year of rising unemployment? (Rising unemployment)

*16. In terms of time -- months or years -- how long do you think the fighting in Viet Nam will last? (6 to 10 years)

*17. What is your best guess as to whether Richard Nixon will ever win the Republican nomination for the Presidency? (Yes)

AIPO 772

Optimism:

Looking ahead to 1969, which of these do you think is likely to be true of 1969:

* 1. A year of economic prosperity -- or a year of economic difficulty? (Economic prosperity)

* 2. A year when taxes will rise or a year when taxes will fall? (Fall)

* 3. A year of strikes and industrial disputes -- or a year of industrial peace? (Industrial peace)

* 4. A year when student demonstrations will increase -- or a year when student demonstrations will decline? (Decline)

Conservatism:

5. In the election in November, 1968 -- when the race was between Nixon, Humphrey and Wallace, for whom did you happen to vote? (Humphrey) (Nixon) (Wallace)

* 6. In politics as of today, do you consider yourself a Republican, Democrat or Independent? (Democrat) (Republican)

Predictive Accuracy:

Looking ahead to 1969, which of these do you think is likely to be true of 1969:

* 7. A year of rising prices -- or a year of falling prices? (Falling prices)

* 8. A year in which the Viet Nam war will be settled or a year when the Viet Nam war will not be settled? (Not settled)

* 9. A year when Russia will increase her power in the world, or a year when Russian power will decline? (Decline)

*10. A year when America will increase her power in the world, or a year when American power will decline? (Decline)

*11. A year when Red China will increase her power in the world, or a year when Red China's power will decline? (Increase)

*12. A year of full employment or a year of rising unemployment? (Rising unemployment)

NORC 857

Optimism:

* 1. Compared with your life today, how do you think things will be four or five years from now? Will things be happier for you then, or not quite as happy as now? (Happier)

Conservatism:

2. Which of these three statements comes closest to how you feel about the situation in Viet Nam? (We should stop our air raids on North Viet Nam right now) (We should continue our air raids on North Viet Nam at about

our present rate) (We should step up our air raids on North Viet Nam, even if it means war with Communist China)

3. Which political party do you generally support? (Democratic) (Republican)

* 4. In politics, would you say you are a liberal or a conservative? (Liberal) (Conservative)

* 5. Do you think white students and Negro students should go to the same schools, or to separate schools? (Same schools) (Separate schools)

* 6. Do you think Negroes should have the right to use the same parks, restaurants, hotels as white people? (Yes) (No)

Predictive Accuracy:

* 7. Do you expect the United States to get into an all-out war with Communist China during the next two years? (No)

* 8. As you probably recall, there were race riots in several Northern cities in this country last summer. The way it looks now, do you expect that this summer there will be many race riots, some, hardly any, or none at all? (Many)

APPENDIX II

INTERCORRELATIONS OF ITEMS FOR CONSTRUCTING COMPOSITE INDICES

Pearson's correlations are presented in intercorrelation matrices for those items which were selected for inclusion in the composite indices for optimism and conservatism for each data set. The presentation of matrices occurs only where more than one item was selected as the indicator. For example, then, only one matrix (conservatism) appears for CIPO 282 because only one item was used as an indicator of optimism for this study. Inasmuch as the intercorrelation matrices are symmetrical, only one side of the diagonal is presented. Below each matrix, the reliability coefficient, Cronbach's alpha, is presented for that index.

TABLE 1

INTERCORRELATIONS OF OPTIMISM ITEMS FOR CIPO 279

	3	6	9	10	11	12	13
3		.1482	.1946	.0609	.1410	.2056	-.1262
6			.2189	.1226	.2923	.2855	.2775
9				.2739	.0954	.2203	.2195
10					-.0379	.0714	.0621
11						.1589	.0800
12							.1417
13							

Cronbach's alpha = .54

TABLE 2

INTERCORRELATIONS OF CONSERVATISM ITEMS FOR CIPO 279

	19	20
19		.8706
20		

Cronbach's alpha = .88

TABLE 3

INTERCORRELATIONS OF CONSERVATISM ITEMS FOR CIPO 282

	2	3
2		.6985
3		

Cronbach's alpha = .82

TABLE 4

INTERCORRELATIONS OF CONSERVATISM ITEMS FOR CIPO 317

	3	4
3		.8308
4		

Cronbach's alpha = .88

TABLE 5

INTERCORRELATIONS OF OPTIMISM ITEMS FOR NORC 330

	1	2
1		.5081
2		

Cronbach's alpha = .62

TABLE 6

INTERCORRELATIONS OF CONSERVATISM ITEMS FOR RCOMO 524

	2	3	4	6	7	11	12	13	15
2		.4797	.4033	.2733	.4484	.4805	.4662	.2375	.2855
3			.2864	.2788	.4081	.5134	.4980	.2874	.2711
4				.2077	.2989	.3646	.3650	.1207	.1894
6					.2559	.3235	.2835	.1583	.1817
7						.3947	.4117	.2155	.4937
11							.5784	.3371	.2859
12								.2244	.2374
13									.1723
15									

Cronbach's alpha = .81

TABLE 7

INTERCORRELATIONS OF OPTIMISM ITEMS FOR AIPO 621

	1	2	3	5	8
1		.1685	.1664	.2879	.1154
2			.2506	.1227	.1046
3				.1151	.0510
5					.2620
8					

Cronbach's alpha = .78

TABLE 8

INTERCORRELATIONS OF CONSERVATISM ITEMS FOR AIPO 621

	9	10
9		.9392
10		

Cronbach's alpha = .78

TABLE 9

INTERCORRELATIONS OF OPTIMISM ITEMS FOR AIPO 721

	1	3	4	8
1		.1859	.4376	.1052
3			.1776	.2187
4				.0700
8				

Cronbach's alpha = .52

TABLE 10

INTERCORRELATIONS OF CONSERVATISM ITEMS FOR AIPO 721

	7	8	9	10	11
7		.3593	.2867	.3229	.3267
8			.1085	.6868	.7877
9				.1055	.0763
10					.5301
11					

Cronbach's alpha = .76

TABLE 11

INTERCORRELATIONS OF OPTIMISM ITEMS FOR AIPO 772

	1	2	3	4
1		.0731	.1401	.1046
2			.1499	.1926
3				.3166
4				

Cronbach's alpha = .71

TABLE 12

INTERCORRELATIONS OF CONSERVATISM ITEMS FOR NORC 857

	4	5	6
4		.1277	.1620
5			.6166
6			

Cronbach's alpha = .54

APPENDIX III

CORRELATION COEFFICIENTS, PATH COEFFICIENTS, AND SIGNIFICANCE TESTS FOR HYPOTHESIZED RELATIONSHIPS IN NINE PUBLIC OPINION POLL STUDIES

For each of the nine analyzed studies, a table is presented which provides information on correlation and path coefficients for each of the five hypotheses constructed in Chapter III. In addition, path coefficients, significant at the .05 level, are designated as such with an asterisk.

For each study, the first-named variable refers to the dependent one; the second, to the independent. Thus, "Predictive Accuracy-Schooling" refers to the regression of predictive accuracy upon schooling. Of course, the correlation coefficients opposite each relationship are symmetrical and we make no assumptions regarding dependence or independence; only for path coefficients is this distinction of import.

TABLE 13

SELECTED INFORMATION FOR CIPO 279

Relationship	Correlation Coefficient	Path Coefficient
Predictive Accuracy -Schooling	-.00827	.01362
Predictive Accuracy -Conservatism	.01141	-.01200
Predictive Accuracy -Optimism	-.25982	-.26008*
Optimism-Schooling	.12047	.12739*
Optimism-Age	.03074	.05625

TABLE 14

SELECTED INFORMATION FOR CIPO 282

Relationship	Correlation Coefficient	Path Coefficient
Predictive Accuracy -Schooling	-.00951	-.03433
Predictive Accuracy -Conservatism	.21498	.20448*
Predictive Accuracy -Optimism	-.03597	-.03244
Optimism-Schooling	-.00847	-.01447
Optimism-Age	-.01742	-.02438

TABLE 15

SELECTED INFORMATION FOR CIPO 317

Relationship	Correlation Coefficient	Path Coefficient
Predictive Accuracy -Schooling	.00629	0
Predictive Accuracy -Conservatism	-.21757	-.23012*
Predictive Accuracy -Optimism	-.07008	-.08552*
Optimism-Schooling	-.00531	.02346
Optimism-Age	.12081	.11693*

TABLE 16

SELECTED INFORMATION FOR NORC 330

Relationship	Correlation Coefficient	Path Coefficient
Predictive Accuracy -Schooling	.19028	.21158*
Predictive Accuracy -Conservatism	.10803	.06502
Predictive Accuracy -Optimism	.05365	.03439*
Optimism-Schooling	.13784	.05761
Optimism-Age	.14224	.16121*

TABLE 17

SELECTED INFORMATION FOR RCOMO 524

Relationship	Correlation Coefficient	Path Coefficient
Predictive Accuracy -Schooling	.01490	0
Predictive Accuracy -Conservatism	.16594	.17137*
Predictive Accuracy -Optimism	.00606	.02014
Optimism-Schooling	-.08943	-.04881
Optimism-Age	.15941	.15280*

TABLE 18

SELECTED INFORMATION FOR AIPO 621

Relationship	Correlation Coefficient	Path Coefficient
Predictive Accuracy -Schooling	.25542	.23212*
Predictive Accuracy -Conservatism	.04402	.01633
Predictive Accuracy -Optimism	.05825	.02217
Optimism-Schooling	.14091	.13631*
Optimism-Age	-.04022	0

TABLE 19

SELECTED INFORMATION FOR AIPO 721

Relationship	Correlation Coefficient	Path Coefficient
Predictive Accuracy -Schooling	.00538	-.00746
Predictive Accuracy -Conservatism	.00526	.01382
Predictive Accuracy -Optimism	-.07760	-.07997*
Optimism-Schooling	-.14023	-.15364*
Optimism-Age	0	0

TABLE 20

SELECTED INFORMATION FOR AIPO 772

Relationship	Correlation Coefficient	Path Coefficient
Predictive Accuracy -Schooling	-.00900	-.01737
Predictive Accuracy -Conservatism	0	0
Predictive Accuracy -Optimism	.05293	.06170
Optimism-Schooling	.12868	.12904*
Optimism-Age	-.07426	-.07488

TABLE 21

SELECTED INFORMATION FOR NORC 857

Relationship	Correlation Coefficient	Path Coefficient
Predictive Accuracy -Schooling	.12164	0
Predictive Accuracy -Conservatism	.02602	.02607
Predictive Accuracy -Optimism	-.01110	-.01121
Optimism-Schooling	-.06467	-.01967
Optimism-Age	.15936	.15533*

Following are diagrams representing the various paths mapping the interrelationships of the five variables under consideration. Paths representing the hypothesized relationships are noted whether or not they are significant. In instances where they are significant at the .05 level, asterisks accompany the value. Unhypothesized relations are noted only when significant. In all cases, the values refer to path coefficients except for the relationship between optimism and conservatism which is expressed in terms of a correlation coefficient and double-headed curved arrow.

DIAGRAM 1

CONCEPTUAL MODEL FOR CIPO 279

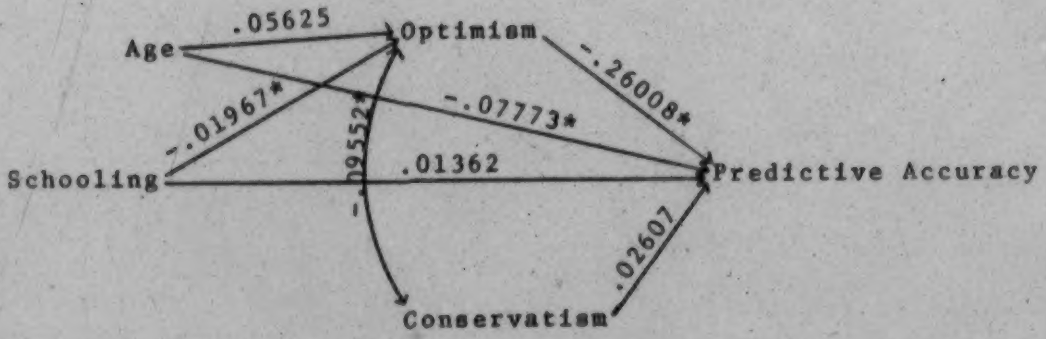

Age
.05625
Optimism
-.26008*
-.07773*
-.01967*
-.09552*
Schooling
.01362
Predictive Accuracy
.02607
Conservatism

DIAGRAM 2

CONCEPTUAL MODEL FOR CIPO 282

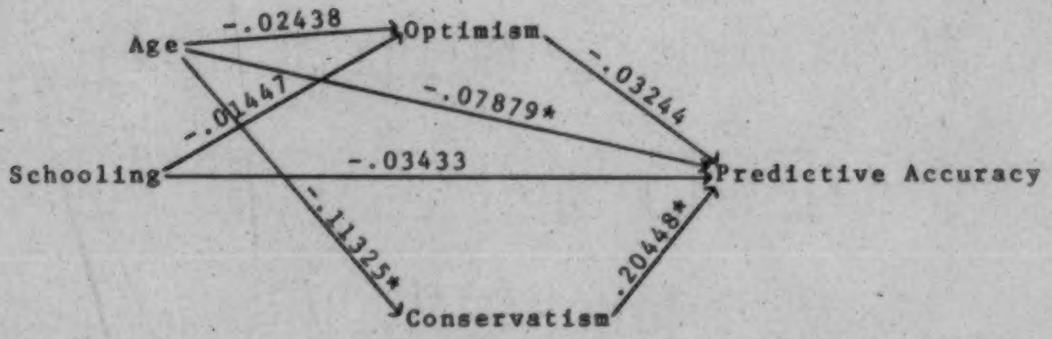

Age
-.02438
Optimism
-.03244
-.07879*
-.01447
Schooling
-.03433
Predictive Accuracy
-.11325*
.20448*
Conservatism

DIAGRAM 3

CONCEPTUAL MODEL FOR CIPO 317

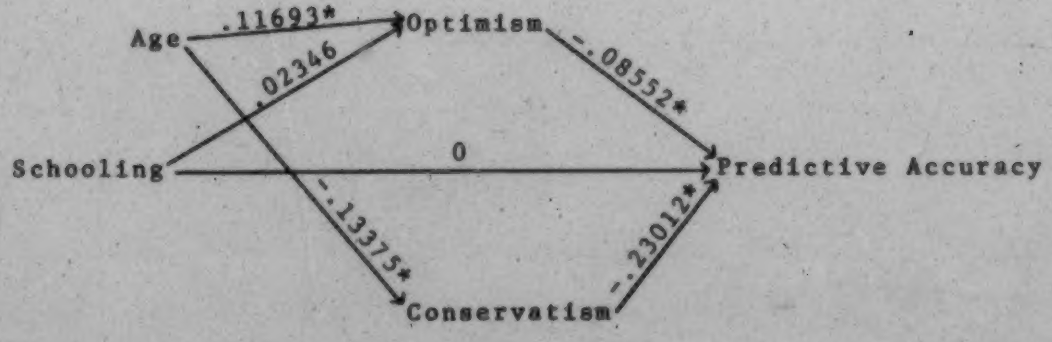

Age
.11693*
Optimism
-.08552*
.02346
Schooling
0
Predictive Accuracy
-.13375*
-.23012*
Conservatism

DIAGRAM 4

CONCEPTUAL MODEL FOR NORC 330

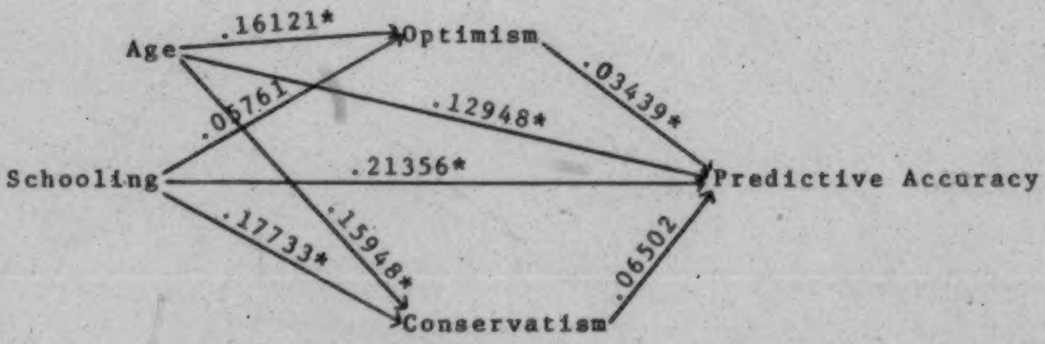

Age
Optimism
Schooling
Predictive Accuracy
Conservatism
.16121*
.05761
.12948*
.03439*
.21356*
.17733*
.15948*
.06502

DIAGRAM 5

CONCEPTUAL MODEL FOR RCOMO 524

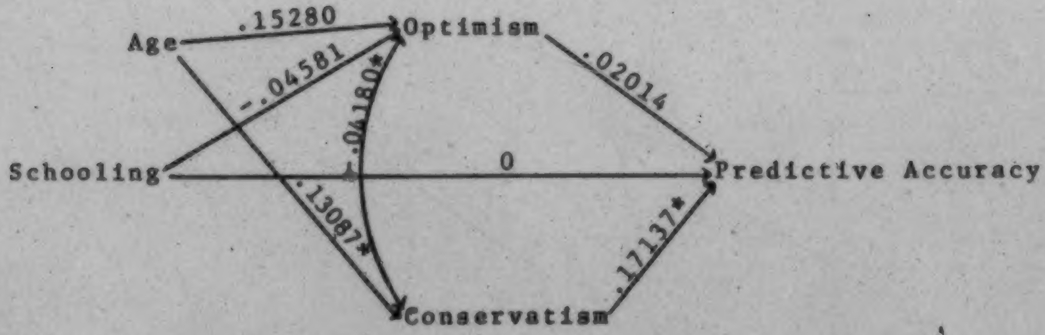

Age
Optimism
Schooling
Predictive Accuracy
Conservatism
.15280
-.04581
.04180*
.02014
0
.13087*
.17137*

DIAGRAM 6

CONCEPTUAL MODEL FOR AIPO 621

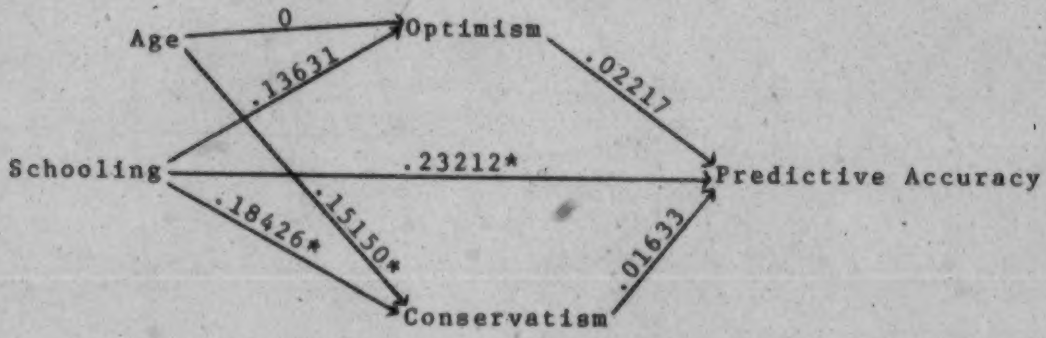

Age
0
Optimism
.13631
.02217
Schooling
.23212*
Predictive Accuracy
.18426*
.15150*
.01633
Conservatism

DIAGRAM 7

CONCEPTUAL MODEL FOR AIPO 721

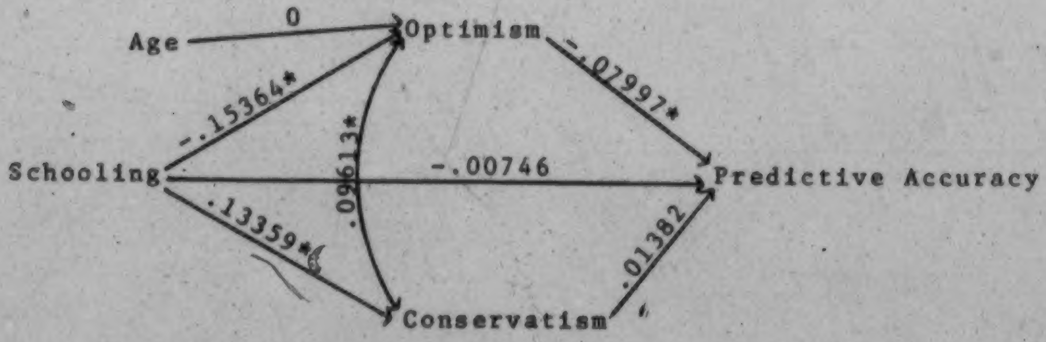

Age
0
Optimism
-.15364*
-.07997*
.09613*
Schooling
-.00746
Predictive Accuracy
.13359*
.01382
Conservatism

DIAGRAM 8

CONCEPTUAL MODEL FOR AIPO 772

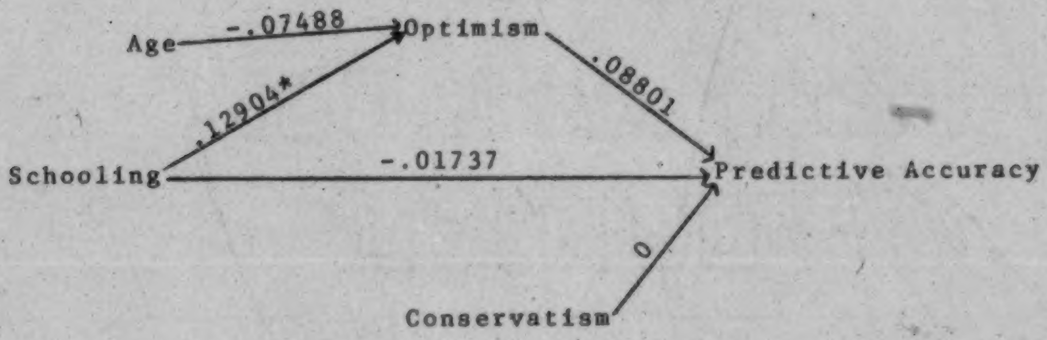
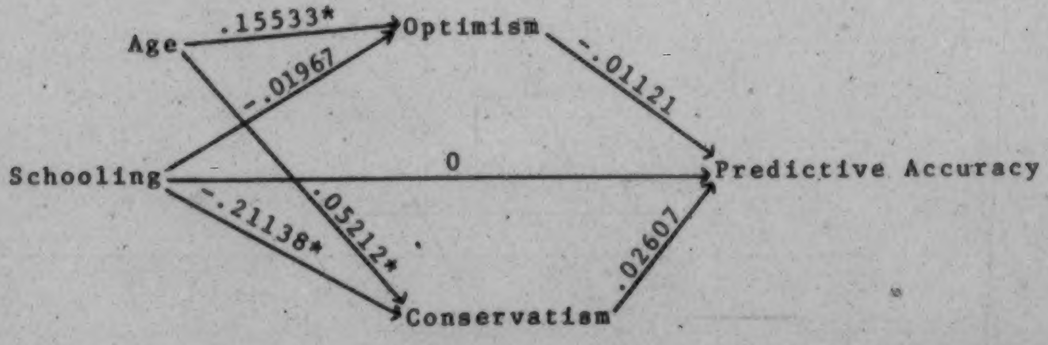

Age
-.07488
Optimism
.12904*
.08801
Schooling
-.01737
Predictive Accuracy
0
Conservatism

DIAGRAM 9

CONCEPTUAL MODEL FOR NORC 857


Age
.15533*
Optimism
-.01967
-.01121
Schooling
0
Predictive Accuracy
-.21138*
.05212*
.02607
Conservatism